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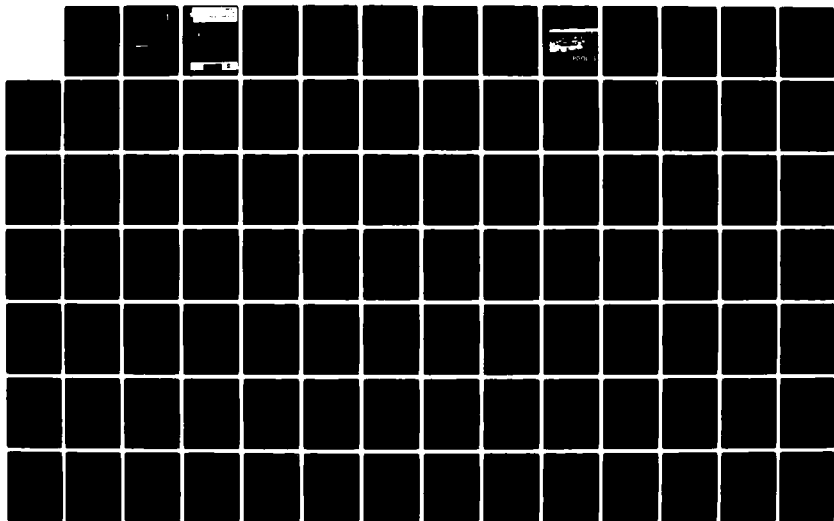
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APPENDIXES VOLUME 8..(U) GREAT RIVER ENVIRONMENTAL
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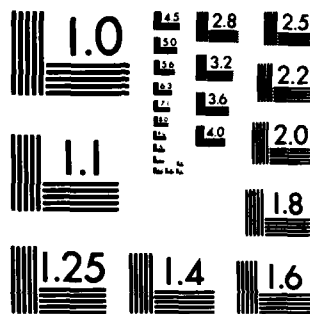
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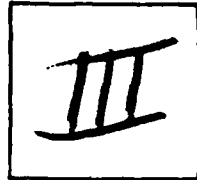


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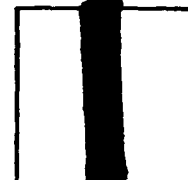
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Volume 8: Channel Maintenance, Part IV - Pool Plans and

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Site Descriptions - Pools 5, 5A, 6, & 7

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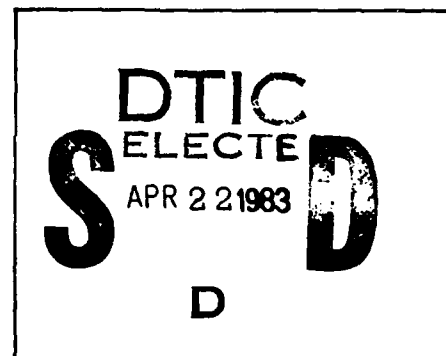
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GREAT I STUDY OF THE UPPER MISSISSIPPI RIVER TECHNICAL APPENDIXES

VOLUME 8

ADA127097



CHANNEL MAINTENANCE PART IV - POOL PLANS AND SITE DESCRIPTIONS— POOLS 5, 5A, 6, & 7

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Channels (waterways) Mississippi River Dredged Material		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The channel maintenance plan is composed of a detailed dredged material placement plan (described in part I) and a set of supporting recommend- ations for dredging and channel maintenance. Parts II-V detail the channel maintenance plan by specific sites.		

CHANNEL MAINTENANCE APPENDIX

PART IV

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This section of the Channel Maintenance Plan (CMP) contains both summarized and detailed information describing GREAT I's selected plan for dredged material placement for various pools. It also contains a qualitative comparison of the selected plan placement sites with other placement sites considered by GREAT I for the pools.

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COMPARISON OF ALTERNATIVE PLACEMENT SITES

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POOL MAP

POOL 7

POOL CMP SUMMARY

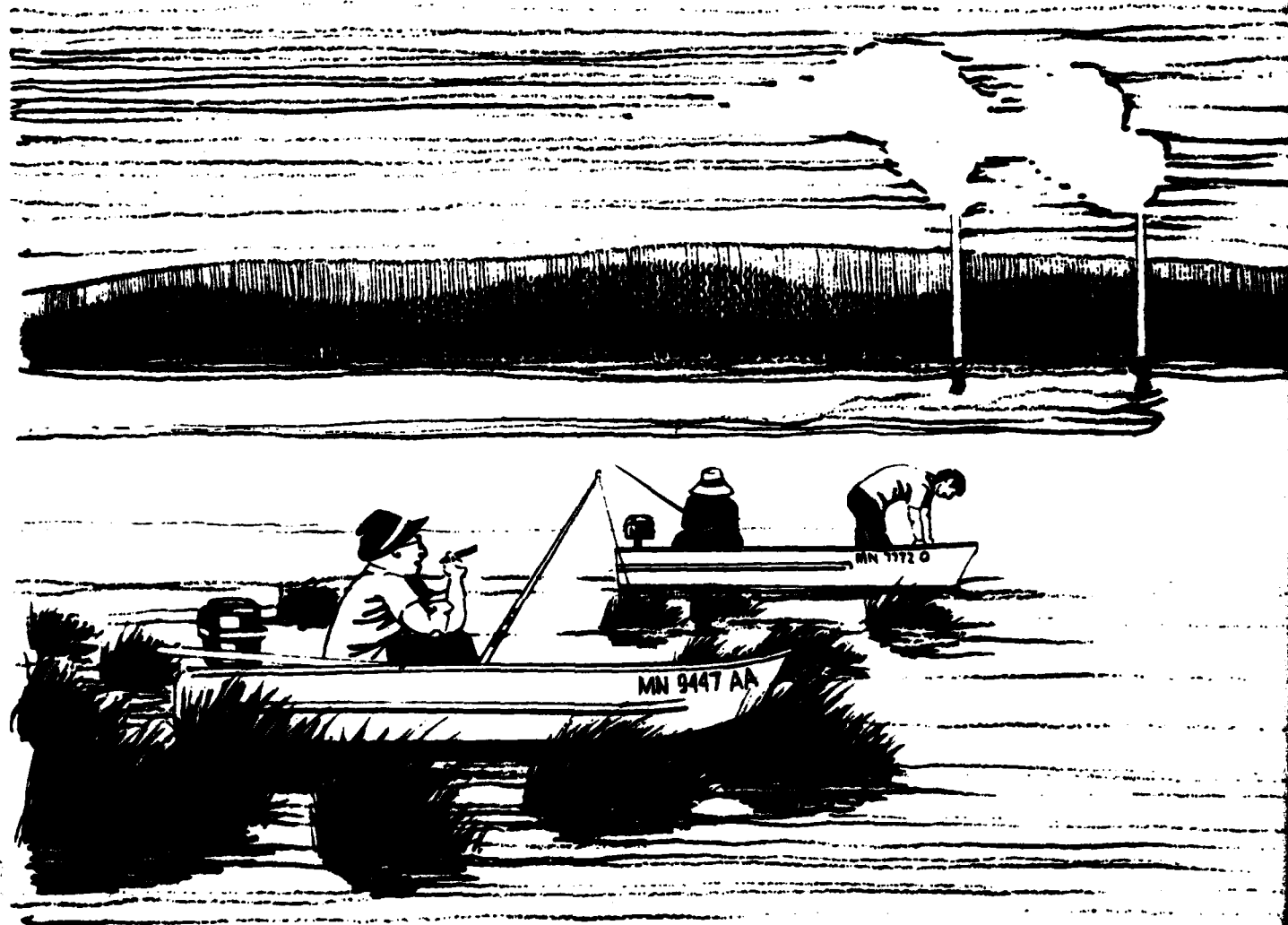
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DREDGED MATERIAL PLACEMENT SITE

DESCRIPTIONS AND COSTS

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POOL 5

CHANNEL MAINTENANCE PLAN SUMMARY

POOL 5

Dredge Cut	MPPMOG CY @ 1985-0225	Selected Site	NED Site	EQ Site	RFP Site	MPPMOG Site	MPPMOG CY @ 1985-2025	Temporary Site
1. Mt. Vernon Light	136,500	5.30	5.03	5.30/5.03	5.24	5.03	198,000	--
2. Sommerfield Island	332,000	5.30	5.06	5.30	5.24	5.06	479,000	--
3. Lower Zumbro	520,000	5.30	5.07	5.30	5.24	5.07	883,500	--
4. Fisher Island	671,000	5.30	5.12	5.30	5.24	5.12	1,139,500	--
5. Below West Newton	381,500	5.26A/5.24/ 5.26/5.28	5.14	5.24	5.24	5.14	862,000	5.12
6. West Newton	557,000	5.26A/5.24/ 5.26/5.28	5.18	5.24	5.28	5.18	611,500	5.18
7. Mule Bend	358,000	5.26A/5.24/ 5.26/5.28	5.21	5.24	5.22	5.21	392,000	5.18
8. Lower Approach to L/D 4	105,500 3,061,500	5.26A/5.24/ 5.26/5.28	5.25	5.24	5.24	5.29	117,000 4,683,000	--

SELECTED PLAN SUMMARY

Total Volume Dredged (cy) - 3,061,500	No. of sites with:
Beneficial Use (cy) Potential from Selected Sites - 2,640,000	Recreation Enhancement - 1
Total Area (acres)	Cultural Resources Impacts - 4
- 76 certain	Wetlands Affected:
plus 5.26A: 15 acres	Types 1, 2 (acres) - 15
or 5.24: 25 acres	Types 3, 4, 5 (acres) - 76
or 5.28: 15 acres	

Table 2-
Pool 5 Dredging Volumes

Item	Name	Cut 1		Cut 2		Cut 3		Cut 4		Cut 5	
		With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT
	Mt. Vernon Light										
	Sommerfield Island										
	Lower Zumbro										
	Fisher Island										
	Below West Newton										
1	- 1974 average annual dredging volume	7,000	7,000	17,100	17,100	31,400	31,400	40,500	40,500	30,600	30,600
	Bend width changes (percent)	-	-	-	-	-	-	-	-	-25	-
	Adjusted average annual volume	7,000	7,000	17,100	17,100	31,400	31,400	40,500	40,500	23,000	30,600
	Change for 1986 - 2000 (percent)	-34	-19	-34	-19	-41 (1)	-19	-41 (1)	-19	-41 (1)	-19
	Adjusted average annual volume	4,600	5,700	11,300	13,800	18,500	25,400	23,900	32,800	13,600	24,800
	Total volume dredged, 1986 - 2000	69,000	85,500	169,500	207,000	277,500	381,000	358,500	492,000	204,000	372,000
	Change for 2001 - 2025 (percent)	-62	-36	-62	-36	-69	-36	-69	-36	-69	-36
	Adjusted average annual volume	2,700	4,500	6,500	10,900	9,700	20,100	12,500	25,900	7,100	19,600
	Total volume dredged, 2001 - 2025	67,500	112,500	162,500	272,500	242,500	502,500	312,500	647,500	177,500	490,000
	Total volume dredged, 1986 - 2025	136,500	198,000	332,000	479,500	520,000	883,500	671,000	1,139,500	381,500	862,000
	Frequency of dredging (percent)	15	15	30	30	60	60	65	65	65	65
	Expected number of dredging jobs (1986 - 2025)	6	6	12	12	24	24	26	26	26	26
	Average dredging volume per job	22,800	33,000	27,700	40,000	21,700	36,800	25,800	43,800	14,700	33,200

Note: All volumes in Cubic Yards
(1) Cut adjacent to side channel cutbares

Table 2
Pool 5 Dredging Volumes

Item	Cut 6		Cut 7		Cut 8	
	With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT
Cut Name	West Newton		Mule Bend		Lower Approach L/D 4	
1955 - 1974 average annual dredging volume	21,700	21,700	10,600	10,600	3,600	3,600
Bend width changes (percent)		-	+31	+31	-	-
Adjusted average annual volume	21,700	21,700	13,900	13,900	3,600	3,600
Changes for 1986 - 2000 (percent)	-34	-19	-34	-19	-24 (1)	-9 (1)
Adjusted average annual volume	14,300	17,600	9,200	11,300	2,700	3,300
Total volume dredged, 1986 - 2000	214,500	264,000	138,000	169,500	40,500	49,500
Change for 2001 - 2025 (percent)	-37	-36	-37	-36	-27 (1)	-2 (1)
Adjusted average annual volume	13,700	13,900	8,800	8,900	2,600	2,700
Total volume dredged, 2001 - 2025	342,500	347,500	220,000	222,500	65,000	67,500
Total volume dredged, 1986 - 2025	557,000	611,500	358,000	392,000	105,500	117,000
Frequency of dredging (percent)	35	35	25	25	30	30
Expected number of dredging jobs (1986 - 2025)	14	14	10	10	12	12
Average dredging volume per job	39,800	43,700	35,800	39,200	8,800	9,800

Note: All volumes in Cubic Yards
(1) Cut in approach to rigid structure.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 1

SITE: 5.30

SITE: 5.30 (Weaver Bottoms Rehabilitation Project)

Page 1 of 3

CUT LOCATION: 741.2 - 741.6 (Mt. Vernon Light)

PLACEMENT SITE LOCATION: RM 744 - 745.4

TYPE OF PLACEMENT SITE: Permanent X Temporary

ELEVATIONS AT SITE:

Site (1980): 655.0 (approx)

100-year flood: 669'

5-year flood: 662'

Flat pool: 659.8'

FLOOD STAGE FACTORS:

Site within floodplain: Yes

Site within floodway (effective flow area): Yes

Site below ordinary high water mark: Yes

SITE CHARACTER:

% Upland: 0

% Wetland: 100

% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 0'

Wetland: 0'

Residence: about 1 mile

Beneficial Use Site: 0'

Other: -

VEGETATION CHARACTER: 76 acres of Types 4 and 5 wetlands would be destroyed but habitat enhancement would occur in the entire Weaver Bottoms area

SITE OWNER: Upper Mississippi River Fish and Wildlife Refuge

SPECIAL CONCERNS:

Endangered species habitat: None

Historical or archeological value: Unknown

Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Fish spawning and feeding fur bearers as, waterfowl feeding and resting area.

Socioeconomic: Some commercial fishing

Adjacent land use: Navigation channel.

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 1
SITE: 5.30

Page 2 of 3

SITE: 5.30

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 258,000 for cut modifications; 1,400,000 for islands.
Area at base (acres): 16 for cut modifications; 60 for islands.
Height (feet): 15
Length (feet): N/A
Width (feet): N/A
Side slope (ratio): 4:1
Final elevation (feet): 670 approx.

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 6/40
Volume dredged per job (cubic yards): 22,800
Beneficial use demand (cubic yards): all material if islands built
Beneficial Use by: COE/FWS
Other cuts using sites: 2, 3, 4

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium to fine sand
Silt (%):
Other (%):
Contaminants: Material nonpolluted, containment necessary to avoid water quality impacts.
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry):

EROSION CONTROL NEEDED:

Riprap: Yes (see Special Features chapter)
Revegetation: Yes (on islands)
Other: None
Areas and features protected by erosion control: backwater area being rehabilitated.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

CUT: 1

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

SITE: 5.30

Page 3 of 3

SITE:

SPECIAL CONDITIONS FOR SITE USE: Specific details to be resolved. Weaver Bottoms project would connect series of barrier islands to prevent flow and sedimentation into backwater area

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	76	4 and 5
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	7	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS

PER DREDGING JOB

Mt. Vernon Light

POOL: 5

CUT: 1

SITE: 5.30

Frequency: 15 %

6 /40 yrs

Volume per job: 22,800 cy

TYPES OF DREDGES

	PIPELINE					MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	700 H.P.	350 H.P.	Clamshell 700 H.P.	
Basic Dredging Operation	\$ -	\$ -	\$ -	\$ 91,000*	\$ 105,000*	\$ 111,000*	\$ 13,000*		
Berming Costs	-	-	-	-	-	-	-	-	-
Diking Costs	-	-	-	-	-	-	-	-	-
Riprapping Costs (1)	-	-	-	-	-	-	-	-	-
Seasonal Removal	0	0	0	0	0	0	0	0	0
Special Construction (1)	-	-	-	-	-	-	-	-	-
Land Acquisition	0	0	0	0	0	0	0	0	0
Total of GREAT recommended Actions	-	-	-	91,000	105,000	111,000	113,000		
Average Annual Costs	-	-	-	13,700	15,800	16,700	17,000		

*GREAT recommended actions

(1) See Weaver Bottoms proposals

DREDGED MATERIAL PLACEMENT SITE

POOL: 5
CUT: 2
SITE: 5.30

EXISTING CONDITIONS DESCRIPTION

SITE: 5.30 (Weaver Bottoms Rehabilitation Project)

Page 1 of 3

CUT LOCATION: 742.7 - 743.8 (Sommerfield Island)

PLACEMENT SITE LOCATION: RM 744 - 745.4

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 655 (approx)
100-year flood: 669'
5-year flood: 662'
Flat pool: 659.8'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: Yes

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 0'
Wetland: 0'
Residence: about 1 mile
Beneficial Use Site: 0'
Other: -

VEGETATION CHARACTER: 76 acres to Types 4 and 5 wetlands would be destroyed but habitat enhancement would occur in the entire Weaver Bottoms area

SITE OWNER: Upper Mississippi River Fish and Wildlife Refuge

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Fish spawning and feeding fur bearers, waterfowl feeding and resting area
Socioeconomic: Some commercial fishing
Adjacent land use: Navigation channel.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 2
SITE: 5.30

Page 2 of 3

SITE: 5.30

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 258,000 for cut modifications; 1,400,000 for islands.
Area at base (acres): 16 for cuts, 60 for islands
Height (feet): 15
Length (feet): N/A
Width (feet): N/A
Side slope (ratio): 4:1
Final elevation (feet): 670 approx.

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 12/40
Volume dredged per job (cubic yards): 27,700
Beneficial use demand (cubic yards): all material if islands built
Beneficial Use by: COE/FWS
Other cuts using sites: 1,3,4

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium to fine sand
Silt (%):
Other (%):
Contaminants: Material nonpolluted, containment necessary to avoid water
Contaminant Source: quality impacts.

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes (see Special Features chapter)
Revegetation: Yes (on islands)
Other: None
Areas and features protected by erosion control: backwater area being rehabilitated.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

CUT: 2

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

SITE: 5.30

(Continued from previous page)

Page 3 of 3

SITE: 5.30

SPECIAL CONDITIONS FOR SITE USE: Specific details to be resolved. Weaver Bottoms project would connect series of barrier islands to prevent flow and sedimentation into backwater area

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	76	4 and 5
Wetlands altered:	None	
Open water filled:		
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	7	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Sommerfield Island

POOL: 5

CUT: 2

SITE: 5.30

Frequency: 30 %

12 /40 yrs

Volume per job: 27,700 cy

CHANNEL MAINTENANCE PLAN COSTS PER DREDGING JOB

	TYPES OF DREDGES						
	PIPELINE				MECHANICAL		
		20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$ 433,000*	\$ -	\$ -	\$ -	\$ 119,000*	\$ 112,000*	\$ 138,000* 132,000*
Berming Costs	9,000	-	-	-	-	-	-
Diking Costs	7,000	-	-	-	-	-	-
Riprapping Costs (1)	-	-	-	-	-	-	-
Seasonal Removal	0	0	0	0	0	0	0
Special Construction (1)	-	-	-	-	-	-	-
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	433,000	-	-	-	119,000	112,000	138,000 132,000
Average Annual Costs	129,900	-	-	-	35,700	33,600	41,400 39,600

*GREAT recommended actions

(1) See Weaver Bottoms Proposals

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 5
CUT: 3
SITE: 5.30

SITE: 5.30 (Weaver Bottoms Rehabilitation Project)

Page 1 of 3

CUT LOCATION: 744.0 - 744.7 (Lower Zumbro)

PLACEMENT SITE LOCATION: RM 744 - 745.4

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 655' (approx)
100-year flood: 669'
5-year flood: 662'
Flat pool: 659.8'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: Yes

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 0'
Wetland: 0'
Residence: about 1 mile
Beneficial Use Site: 0'
Other: -

VEGETATION CHARACTER: 76 acres of Types 4 and 5 wetlands would be destroyed but habitat enhancement would occur in the entire Weaver Bottoms area

SITE OWNER: Upper Mississippi River Fish and Wildlife Refuge

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Fish spawning and feeding fur bearers, waterfowl feeding and resting area
Socioeconomic: Some commercial fishing
Adjacent land use: Navigation channel

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 3
SITE: 5.30

Page 2 of 3

SITE: 5.30

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 258,000 for cut modifications; 1,400,000 for islands.
Area at base (acres): 16 for cuts, 60 for islands
Height (feet): 15
Length (feet): N/A
Width (feet): N/A
Side slope (ratio): 4:1
Final elevation (feet): 670 (approx)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 24/40
Volume dredged per job (cubic yards): 21,700
Beneficial use demand (cubic yards): all material if islands built.
Beneficial Use by: COE/FWS
Other cuts using sites: 1, 2, 3, 4

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium to fine sand
Silt (%):
Other (%):
Contaminants: material nonpolluted, containment necessary to avoid water quality impacts.
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes (see Special Features Chapter)
Revegetation: Yes (on islands)
Other: None
Areas and features protected by erosion control: backwater area being rehabilitated.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 3
SITE: 5.30

Page 3 of 3

SITE: 5.30

SPECIAL CONDITIONS FOR SITE USE: Specific details to be resolved. Weaver Bottoms project would connect series of barrier islands to prevent flow and sedimentation into backwater area

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	76	4 and 5
Wetlands altered:	None	
Open water filled:		
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	7	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made. ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Lower Zumbro
FOOL: 5
CUT: 3
SITE: 5.30

Frequency: 60 %
24 /40 yrs
Volume per job: 21,700 cy

	TYPES OF DREDGES						
	PIPELINE			MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$ 125,000*	\$ 153,000*	\$ 148,000*	\$ 79,000*	\$ 86,000*	\$ 106,000*	\$ 101,000*
Berming Costs	4,000	5,000	7,000	-	-	-	-
Diking Costs	7,000	6,000	5,000	-	-	-	-
Riprapping Costs (1)	-	-	-	-	-	-	-
Seasonal Removal	0	0	0	0	0	0	0
Special Construction (1)	-	-	-	-	-	-	-
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	125,000	153,000	148,000	79,000	86,000	106,000	101,000
Average Annual Costs	75,000	91,800	88,800	47,400	51,600	63,600	60,600

*GREAT recommended actions

(1) See Weaver Bottoms proposals

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 4

SITE: 5.30

SITE: 5.30 (Weaver Bottoms Rehabilitation Project)

Page 1 of 3

CUT LOCATION: 744.8 - 746.0 (Fisher Island)

PLACEMENT SITE LOCATION: RM 744 - 745.4

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 655' (approx)
100-year flood: 669'
5-year flood: 662'
Flat pool: 659.8'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: Yes

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water:

DISTANCE FROM SITE TO:

Open Water: 0'
Wetland: 0'
Residence: about 1 mile
Beneficial Use Site: 0'
Other: -

VEGETATION CHARACTER: 40 acres of Types 4 and 5 wetlands would be destroyed but habitat enhancement would occur in the entire Weaver Bottoms area

SITE OWNER: Upper Mississippi River Fish and Wildlife Refuge

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Fish spawning and feeding fur bearers acres, waterfowl feeding and resting area
Socioeconomic: Some commercial fishing
Adjacent land use: Navigation channel

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 4
SITE: 5.30

Page 2 of 3

SITE: 5.30

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 258,000 for cut modifications; 1,400,000 for islands.
Area at base (acres): 16 for cuts, 60 for islands
Height (feet): 15
Length (feet): N/A
Width (feet): N/A
Side slope (ratio): 4:1
Final elevation (feet): 670 (approx)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 26/40
Volume dredged per job (cubic yards): 25,800
Beneficial use demand (cubic yards): all material if islands built.
Beneficial Use by: COE/FWS
Other cuts using sites: 1,2,3,4

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium to fine sand
Silt (%):
Other (%):
Contaminants: Material nonpolluted, containment necessary to avoid water quality impacts.
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes (see Special Features Chapter)
Revegetation: Yes (on islands)
Other: None
Areas and features protected by erosion control: backwater area being rehabilitated.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 4
SITE: 5.30

Page 3 of 3

SITE: 5.30

SPECIAL CONDITIONS FOR SITE USE: Specific details to be resolved. Weaver Bottoms project would connect series of barrier islands to prevent flow and sedimentation into backwater area

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	76	4 and 5
Wetlands altered:	None	
Open water filled:		
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	7	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Fisher Island
POOL: 5
CUT: 4
SITE: 5.30

Frequency: 65%
26/40 yrs
Volume per job: 25,800 cy

	TYPES OF DREDGES					
	PIPELINE					MECHANICAL
		20 inch	16 inch	12 inch	Backhoe 350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$ 327,000*	\$ 299,000*	\$ -	\$ -	\$ 97,000*	\$ 128,000*
Berming Costs	7,000	9,000	-	-	-	-
Diking Costs	7,000	6,000	-	-	-	-
Riprapping Costs (1)	-	-	-	-	-	-
Seasonal Removal	0	0	0	0	0	0
Special Construction (1)	-	-	-	-	-	-
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	327,000	299,000	-	-	97,000	128,000
Average Annual Costs	212,600	174,000	-	-	63,100	83,200

*GREAT recommended actions

(1) See Weaver Bottoms Proposals

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 5

SITE: 5.26A

SITE: 5.26A

Page 1 of 3

CUT LOCATION: 746.0 - 746.8 (Below West Newton)

PLACEMENT SITE LOCATION: RM 751.2

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 670 (approx)
100-year flood: 673.0
5-year flood: 667.0
Flat pool: 660.0

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: adjacent
Wetland: 0'
Residence: 2000'
Beneficial Use Site: 0'
Other:

VEGETATION CHARACTER: bottomland hardwoods

SITE OWNER:

Dairyland Power

SPECIAL CONCERNS:

Endangered species habitat: likely place for wintering Bald eagle roosts
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: furbearers, waterfowl nesting, fish spawning

Socioeconomic: potential expansion for Dairyland Power.

Adjacent land use: Main channel, electrical power generating plant

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 5
SITE: 5.26A

Page 2 of 3

SITE: 5.26 A

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 500,000
Area at base (acres): 15
Height (feet): 25
Length (feet): 800
Width (feet): 800
Side slope (ratio): -
Final elevation (feet): 695 (approx)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 26/40
Volume dredged per job (cubic yards): 14,700
Beneficial use demand (cubic yards): 923,000
Beneficial Use by: Buffalo, Belvidere Twp, Wisconsin DOT, Buffalo Co.
Other cuts using sites: 6,7,8 (½ Buff. Co. demand assigned to 5.26A
½ to 4.02)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: possibly
Revegetation: No
Other: removal of material for beneficial uses.
Areas and features protected by erosion control: adjacent backwaters and sloughs.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 5
SITE: 5.26A

Page 3 of 3

SITE: 5.26A

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites be completed before use (preferential order may change)

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	15	1
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	0	
Endangered Species habitat lost:	15	possible eagle roost
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Below West Newton

POOL: 5

CUT: 5

SITE: 5.26A

Frequency: 65 %

26/40 yrs

Volume per job: 14,700 cy

PIPELINE	TYPES OF DREDGES				
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	MECHANICAL 350 H.P. 700 H.P. 700 H.P.

Basic Dredging Operation	\$ 217,000*	\$ 234,000*	\$ 232,000*	\$ 93,000*	\$ 99,000*	\$ 105,000*	\$ 106,000*
Berming Costs	3,000 (1)*	4,000 (1)*	5,000 (1)*	-	-	-	-
Diking Costs	8,000	6,000	4,000	-	-	-	-
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction (2)	5,000*	5,000*	5,000*	5,000*	5,000*	5,000*	5,000*
Land Acquisition	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Total of GREAT recommended Actions	225,000	243,000	242,000	98,000	104,000	110,000	111,000
Average Annual Costs	146,300	158,000	157,300	63,700	67,600	71,500	72,200

*GREAT recommended actions

(1) At 5.14.

(2) Berming at 5.26A.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 5

SITE: 5.24

SITE: 5.24

Page 1 of 3

CUT LOCATION: 746.0 - 746.8 (Below West Newton)

PLACEMENT SITE LOCATION: AM 750.1

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 680 (approx)

100-year flood: 672.2

5-year flood: 666.6

Flat pool: 660.0

FLOOD STAGE FACTORS:

Site within floodplain: No

Site within floodway (effective flow area): No

Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100

% Wetland:

% Open water:

DISTANCE FROM SITE TO:

Open Water: 750 ft.

Wetland: 200 ft.

Residence: 500 ft.

Beneficial Use Site: 0'

Other:

VEGETATION CHARACTER: agricultural field

SITE OWNER: private

SPECIAL CONCERNS:

Endangered species habitat: None

Historical or archeological value: Unknown

Other:

EXISTING USE OF SITE:

Fish and Wildlife: furbearers, waterfowl feedi.

Socioeconomic: Cereal Crops

Adjacent land use: agricultural, wetlands

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 5
SITE: 5.24

Page 2 of 3

SITE: 5.24

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards):	1,500,000
Area at base (acres):	36
Height (feet):	25
Length (feet):	1250
Width (feet):	1250
Side slope (ratio):	-
Final elevation (feet):	705 (approx)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 26/40
Volume dredged per job (cubic yards): 14,700
Beneficial use demand (cubic yards): 41,000 +
Beneficial Use by: Wabasha Co., Kellog, (Minnesota DOT?)
Other cuts using sites: 5,6,7,8

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): (would have to pump material from rehandling site to 5.24)

EROSION CONTROL NEEDED:

Riprap: No
Revegetation: No
Other:
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

CUT: 5

SITE: 5.24

Page 3 of 3

SITE: 5.24

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites be completed before use (preferential order may change)

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	36	agricultural land
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Below West Newton
POOL: 5
CUT: 5
SITE: 5.24

Frequency: 65 %
26/40 yrs
Volume per job: 14,700 cy

TYPES OF DREDGES				
PIPELINE	20 inch	16 inch	12 inch	MECHANICAL
				Backhoe 350 H.P. 700 H.P. 350 H.P. 700 H.P. Clamshell 700 H.P.

Basic Dredging Operation	\$ 316,000*	\$ 266,000*	\$ -	\$ -	\$ -	\$ -
Berming Costs	5,000*	7,000*	-	-	-	-
Diking Costs	8,000	6,000	-	-	-	-
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	-	-	-	-	-	-
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	321,000	273,000	-	-	-	-
Average Annual Costs	208,700	117,500	-	-	-	-

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 5

SITE: 5.26

SITE: 5.26

Page 1 of 3

CUT LOCATION: 746.0 - 746.8 (Below West Newton)

PLACEMENT SITE LOCATION: RM 751.2

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 670'
100-year flood: 674'
5-year flood: 667'
Flat pool: 660'

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Less than 250'
Wetland: 0'
Residence: Less than 500'
Beneficial Use Site: 0'
Other: Adjacent to railroad tracks

VEGETATION CHARACTER: Varies depending on exact location of site, possibly
100% cattails, lotus, and arrowhead.

SITE OWNER: Dairyland Power Loop.

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Good fishery, waterfowl, furbearer and upland game
habitat
Socioeconomic: Rail loop for power plant
Adjacent land use: Navigation channel, power plant, railroad line, state
highway

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 5
SITE: 5.26

Page 2 of 3

SITE: 5.26

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 500,000
Area at base (acres): 15
Height (feet): 25
Length (feet): 800
Width (feet): 800
Side slope (ratio): ---
Final elevation (feet): 685

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 26/40
Volume dredged per job (cubic yards): 14,700
Beneficial use demand (cubic yards): 931,000
Beneficial Use by: Belvidere Township, Buffalo City, WI DOT, Buffalo County
Other cuts using sites: 6, 7, 8 (½ Buff. Co. demand assigned to 5.26 ½ to 4.02)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): (possible hydraulic rehandling to the site).

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Disposal site located within Alma Power Plant rail loop
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 5
SITE: 5.26

Page 3 of 3

SITE:

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites be completed before use (preferential order may change)

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u> 1, 3, or 4
Wetlands filled:	15	
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Below West Newton
POPL: 5
CUT: 5
SITE: 5.26

Frequency: 65 %
26/40 yrs
Volume per job: 14,700 cy

	TYPES OF DREDGES						
	PIPELINE			MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$ 248,000*	\$ 242,000*	\$ 240,000*	\$ 106,000*	\$ 112,000*	\$ 115,000*	\$ 119,000*
Berming Costs	3,000 (1)*	4,000 (1)*	5,000 (1)*	-	-	-	-
Diking Costs	7,000	7,000	5,000	-	-	-	-
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction (2)	5,000*	5,000*	5,000*	5,000*	5,000*	5,000*	5,000*
Land Acquisition	57,000	57,000	57,000	57,000	57,000	57,000	57,000
Total of GREAT recommended Actions	256,000	251,000	250,000	111,000	117,000	120,000	124,000
Average Annual Costs	166,400	163,200	162,500	72,200	76,100	78,000	80,600

*GREAT recommended actions

(1) At 5.14.

(2) Berming at 5.26.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 5

SITE: 5.28

SITE: 5.28

Page 1 of 3

CUT LOCATION: 746.0 - 746.8 (Below West Newton)

PLACEMENT SITE LOCATION: RM 747.0

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 671 (approx)

100-year flood: 670.8

5-year flood: 664.4

Flat pool: 660.0

FLOOD STAGE FACTORS:

Site within floodplain: No

Site within floodway (effective flow area): No

Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100

% Wetland:

% Open water:

DISTANCE FROM SITE TO:

Open Water: 17,000

Wetland: 1,000

Residence: 1,000

Beneficial Use Site: 0

Other:

VEGETATION CHARACTER: Some trees, grass, shrubs

SITE OWNER: Private

SPECIAL CONCERNS:

Endangered species habitat: None

Historical or archeological value: Unknown

Other:

EXISTING USE OF SITE:

Fish and Wildlife: Upland game birds

Socioeconomic: Abandoned quarry

Adjacent land use: County road, railroad, agricultural land

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 5
SITE: 5.28

SITE: 5.28

Page 2 of 3

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 500,000
Area at base (acres): 15
Height (feet): 25
Length (feet): 800
Width (feet): 800
Side slope (ratio): ---
Final elevation (feet): 686 (approx)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 26/40
Volume dredged per job (cubic yards): 14,700
Beneficial use demand (cubic yards): 923,000
Beneficial Use by: Cochrane, Buffalo, Belvidere Twp., Wis DOT, Buffalo Co.
Other cuts using sites: 5, 6, 7, 8 (½ Buff. Co. demand assigned to
5.26 or replacement (5.28 or 5.26
A) and ½ to site 4.02)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: No
Revegetation: No
Other:
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 5
SITE: 5.28

Page 3 of 3

SITE:

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites be completed before use (preferential order may change)

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	0
Wetlands altered:	0	0
Open water filled:	0	0
Upland altered:	15	Abandoned quarry
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Below West Newton
POOL: 5
CUT: 5
SITE: 5.28

Frequency: 65%
26/40 yrs
Volume per job: 14,700 cy

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$158,000*	\$176,000*	\$174,000*	\$66,000*	\$71,000*	\$84,000*
Berming Costs (1)	3,000*	4,000*	5,000*	-	-	-
Diking Costs (1)	8,000	6,000	4,000	-	-	-
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal (2)	42,000*	42,000*	42,000*	42,000*	42,000*	42,000*
Special Construction (3)	25,000*	25,000*	25,000*	25,000*	25,000*	25,000*
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	228,000	247,000	246,000	133,000	138,000	151,000
Average Annual Costs	148,200	160,600	159,900	86,500	89,700	98,200

*GREAT recommended actions

- (1) at 5.14
(2) Trucking from 5.28A to 5.28 during the dredging operation
(3) Clearing access channel to 5.28A

DREDGED MATERIAL PLACEMENT SITE

POOL: 5
CUT: 5
SITE: 5.12

EXISTING CONDITIONS DESCRIPTION

SITE: 5.12

Page 1 of 3

CUT LOCATION: 746.0 - 746.8 (Below West Newton)

PLACEMENT SITE LOCATION: RM 746.0

TYPE OF PLACEMENT SITE: Permanent _____ Temporary X

ELEVATIONS AT SITE:

Site (1980): 675 (approx)
100-year flood: 670.2
5-year flood: 663.2
Flat pool: 660.0

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: Partial

SITE CHARACTER:

% Upland: 100
% Wetland:
% Open water:

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: Adjacent
Residence: 1,500 ft.
Beneficial Use Site: 1,800 ft.
Other:

VEGETATION CHARACTER: Sand containment site, minimal vegetation

SITE OWNER: Federal

SPECIAL CONCERNS: 0

Endangered species habitat: 0
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Possible turtle nesting
Socioeconomic: spoil disposal site
Adjacent land use: Main channel and backwaters

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 5
SITE: 5.12

SITE: 5.12

Page 2 of 3

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 64,000 (1980)
Area at base (acres): 5.5
Height (feet): 10
Length (feet): 600
Width (feet): 400
Side slope (ratio): ---
Final elevation (feet):

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 26/40
Volume dredged per job (cubic yards): 14,700
Beneficial use demand (cubic yards): 0
Beneficial Use by: N/A
Other cuts using sites:

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: No
Revegetation: No
Other: Material to be removed before the next seasonal high waters.
Areas and features protected by erosion control:

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

CUT: 5

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

SITE: 5.12

Page 3 of 3

SITE:

SPECIAL CONDITIONS FOR SITE USE: Material must be removed from site after
each use.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	5.5	Old spoil site
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Channel Maintenance Plan Costs

Cost figures were not calculated for this site because it is a temporary placement site. Material placed at this site must either be immediately removed to another site or removed to another site after material from several dredging jobs has been placed at the site. Cost for rehandling the material will vary according to demand for material, equipment available for removing the material, how much material must be removed during one rehandling operation, and where the material is ultimately placed.

Due to the number of variables affecting the cost of using this temporary site, calculation of cost estimates would not be meaningful for comparing with placement costs at other sites or with other methods.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 6

SITE: 5.26A

SITE: 5.26A

Page 1 of 3

CUT LOCATION: 747.2 - 748.2 (West Newton)

PLACEMENT SITE LOCATION: RM 751.2

TYPE OF PLACEMENT SITE: Permanent X Temporary

ELEVATIONS AT SITE:

Site (1980): 670 (approximately)
100-year flood: 673.0
5-year flood: 667.0
Flat pool: 660.0

ES

FLOOD STAGE FACTORS:

Site within floodplain: yes
Site within floodway (effective flow area): yes
Site below ordinary high water mark: ?

DR

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DR

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0'
Residence: 2000'
Beneficial Use Site: 0'
Other:

ER

VEGETATION CHARACTER:

bottomland hardwoods

SITE OWNER:

Dairyland Power

SPECIAL CONCERNS:

Endangered species habitat: likely place for wintering bald eagle roosts
Historical or archeological value: unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife:
Furbearers, waterfowl nesting, fish spawning
Socioeconomic:
potential expansion for Dairyland Power
Adjacent land use:
main channel, electrical power generating plant

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 6
SITE: 5.26A

Page 2 of 3

SITE: 5.26A

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 500,000
Area at base (acres): 15
Height (feet): 25
Length (feet): 800
Width (feet): 800
Side slope (ratio): ----
Final elevation (feet): 686 (approximately)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 14/40
Volume dredged per job (cubic yards): 39,800
Beneficial use demand (cubic yards): 923,000
Beneficial Use by: Cochrane, Buffalo City, Belvidere Twp, Wis DOT, Buffalo Co.
Other cuts using sites: 5,7,8 (½ Buff. Co. demand assigned to 5.26A
and ½ to site 4.02)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 97% medium to fine sand
Silt (%): 3%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: possibly
Revegetation: No
Other: removal of material for beneficial uses.
Areas and features protected by erosion control:
adjacent wetlands and sloughs

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

(Continued from previous page)

POOL: 5

CUT: 6

SITE: 5.26A

Page 3 of 3

SITE: 5.26A

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites be completed before use (preferential order may change).

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	15	1
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	0	
Endangered Species habitat lost:	15	possible eagle roost
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

West Newton

POOL: 5

CUT: 6

SITE: 5.26A

Frequency: 35 %

14/40 yrs

Volume per job: 39,800 cy

CHANNEL MAINTENANCE PLAN COSTS PER DREDGING JOB

	TYPES OF DREDGES					
	PIPELINE				MECHANICAL	
		20 inch	16 inch	12 inch	Backhoe 350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$520,000	\$585,000	\$645,000	\$243,000	\$246,000	\$276,000
Berming Costs (1)	6,000*	10,000*	18,000*	-	-	-
Diking Costs	8,000	7,000	7,000	-	-	-
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction (2)	18,000*	18,000*	18,000*	18,000*	18,000*	18,000*
Land Acquisition	10,000	10,000	10,000	10,000	10,000	10,000
Total of GREAT recommended Actions	544,000	613,000	681,000	261,000	264,000	294,000
Average Annual Costs	190,400	214,600	238,400	91,400	92,400	102,900

*GREAT recommended actions

(1) At 5.18.

(2) Berming at 5.26A.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 6

SITE: 5.24

SITE: 5.24

Page 1 of 3

CUT LOCATION: 747.2 - 748.2 (West Newton)

PLACEMENT SITE LOCATION: RM 750.1

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 680 (approximately)

100-year flood: 672.2

5-year flood: 666.6

Flat pool: 660.0

FLOOD STAGE FACTORS:

Site within floodplain: No

Site within floodway (effective flow area): No

Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100

% Wetland: 0

% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 750 ft

Wetland: 200 ft

Residence: 500ft

Beneficial Use Site: 0

Other:

VEGETATION CHARACTER: Agricultural field

SITE OWNER: Private

SPECIAL CONCERNS:

Endangered species habitat: No

Historical or archeological value: Unknown

Other:

EXISTING USE OF SITE:

Fish and Wildlife: furbearers, waterfowl feeding

Socioeconomic: cereal crops

Adjacent land use: agricultural and wetlands

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 6
SITE: 5.24

Page 2 of 3

SITE: 5.24

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 1,500,000
Area at base (acres): 36
Height (feet): 25
Length (feet): 1250
Width (feet): 1250
Side slope (ratio): --
Final elevation (feet): 705 (approximately)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 14/40
Volume dredged per job (cubic yards): 39,800
Beneficial use demand (cubic yards): 41,000 +
Beneficial Use by: Wabasha Co., Kellogg, (Minn DOT?)
Other cuts using sites: 5,7,8

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 97% medium to fine sand
Silt (%): 3%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): (would have to pump material from rehandling site to 5.24)

EROSION CONTROL NEEDED:

Riprap: No
Revegetation: No
Other:
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 6
SITE: 5.24

Page 3 of 3

SITE: 5.24

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites be completed before use (preferential order may change)

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	36	Agricultural land
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

West Newton
POOL: 5
CUT: 6
SITE: 5.24

Frequency: 35 %
14/40 yrs
Volume per job: 39,800 cy

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$450,000*	\$439,000*	\$ -	\$ -	\$ -	\$ -
Berming Costs	9,000*	13,000*	-	-	-	-
Diking Costs	8,000	7,000	-	-	-	-
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	459,000	452,000	-	-	-	-
Average Annual Costs	160,700	158,200				

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 6

SITE: 5.26

SITE: 5.26

Page 1 of 3

CUT LOCATION: 747.2 - 748.2 (Below West Newton)

PLACEMENT SITE LOCATION: RM 751.2

TYPE OF PLACEMENT SITE: Permanent X Temporary

ELEVATIONS AT SITE:

Site (1980): 670'
100-year flood: 674'
5-year flood: 667'
Flat pool: 660'

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: less than 250'
Wetland: 0'
Residence: less than 500'
Beneficial Use Site: 0'
Other: Adjacent to railroad tracks

VEGETATION CHARACTER:

varies depending on exact location of site, possibly 100% cattails, lotus,
and arrowheads.

SITE OWNER:

Dairyland Power Coop.

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: good fishery, waterfowl, furbearers and upland game
habitat.
Socioeconomic:
Rail loop for power plant
Adjacent land use:
Navigation channel, power plant, railroad line, state highway

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 6
SITE: 5.26

Page 2 of 3

SITE: 5.26

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 500,000
Area at base (acres): 15
Height (feet): 25
Length (feet): 800
Width (feet): 800
Side slope (ratio): --
Final elevation (feet): 685

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 14/40
Volume dredged per job (cubic yards): 742.2 - 748.2
Beneficial use demand (cubic yards): 931,000
Beneficial Use by: Belvidere Township, Buffalo City, WI DOT, Buffalo County
Other cuts using sites: 5,7,8 (½ Buff. Co. demand assigned to 5.26
for replacement (5.26A or 5.28) and
½ to site 4.02)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 97 medium to fine sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): (possible hydraulic rehandling to the site).

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Placement site located within Alma Power Plant rail loop
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 6
SITE: 5.26

Page 3 of 3

SITE: 5.26

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites to be completed before use (preferential order may change).

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u> 1, 3, or 4
Wetlands filled:	15	
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

West Newton
POOL: 5
CUT: 6
SITE: 5.26

Frequency: 35 %
 14 / 40 yrs
 Volume per job: 39,800 cy

CHANNEL MAINTENANCE PLAN COSTS
 PER DREDGING JOB

PIPELINE	TYPES OF DREDGES				
	20 inch	16 inch	12 inch	MECHANICAL	
				Backhoe 350 H.P.	Clamshell 700 H.P.

Basic Dredging Operation	\$ 567,000*	\$ 663,000*	\$ 723,000*	\$ 277,000*	\$ 279,000*	\$ 310,000*	\$ 299,000
Berming Costs (1)	6,000*	10,000	18,000*	-	-	-	-
Diking Costs (1)	8,000*	7,000	7,000	-	-	-	-
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction (2)	18,000*	18,000*	18,000*	18,000*	18,000*	18,000*	18,000*
Land Acquisition	57,000*	57,000	57,000	57,000	57,000	57,000	57,000
Total of GREAT recommended Actions	600,000	691,000	759,000	295,000	297,000	328,000	317,000
Average Annual Costs	210,000	241,900	265,700	103,300	104,000	114,800	110,850

*GREAT recommended actions

(1) at 5.18
 (2) Berming at 5.26

DREDGED MATERIAL PLACEMENT SITE

POOL:5

EXISTING CONDITIONS DESCRIPTION

CUT:6

SITE:5.28

SITE: 5.28

Page 1 of 3

CUT LOCATION: 747.2 - 748.2 (West Newton)

PLACEMENT SITE LOCATION: RM 747.0

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 671

100-year flood: 670.8

5-year flood: 664.4

Flat pool: 660.0

FLOOD STAGE FACTORS:

Site within floodplain: No

Site within floodway (effective flow area): No

Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100

% Wetland: 0

% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 1,700

Wetland: 1,000

Residence: 1,000

Beneficial Use Site: 0

Other:

VEGETATION CHARACTER:

Some trees, grass, shrubs

SITE OWNER:

private

SPECIAL CONCERNS:

Endangered species habitat: None

Historical or archeological value: Unknown

Other:

EXISTING USE OF SITE:

Fish and Wildlife: upland game birds

Socioeconomic: abandoned quarry

Adjacent land use: County road, railroad, agricultural land

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 6
SITE: 5.28

Page 2 of 3

SITE: 5.28

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 500,000
Area at base (acres): 15
Height (feet): 25
Length (feet): 800
Width (feet): 800
Side slope (ratio): --
Final elevation (feet): 686 (approximately)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 14/40
Volume dredged per job (cubic yards): 39,8000
Beneficial use demand (cubic yards): 923,000
Beneficial Use by: Cochrane, Buffalo, Belvidere Twp., Wis DOT, Buffalo Co.
Other cuts using sites: 5,7,8 (½ Buff. Co. demand assigned to 5.26 or replacement (5.28 or 5.26A) and ½ to Site 4.02)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 97% medium to fine sand
Silt (%): 3%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: No
Revegetation: No
Other:
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 6
SITE: 5.28

Page 3 of 3

SITE: 5.28

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites to be completed before use (preferential order may change)

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	15	abandoned quarry
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

West Newton
POOL: 5
CUT: 6
SITE: 5.28

Frequency: 35 %
 14/40 yrs
 Volume per job: 39,800 cy

CHANNEL MAINTENANCE PLAN COSTS
 PER DREDGING JOB

	TYPES OF DREDGES						
	PIPELINE			MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$539,000	\$456,000	\$516,000	\$149,000	\$160,000	\$197,000	\$194,000
Berming Costs	11,000 ^{(2)*}	10,000 ^{(1)*}	18,000 ^{(1)*}	-	-	-	-
Diking Costs	8,000	7,000	7,000	-	-	-	-
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal ⁽³⁾	85,000*	85,000*	85,000*	85,000*	85,000*	85,000*	85,000*
Special Construction ⁽⁴⁾	0	25,000*	25,000*	25,000*	25,000*	25,000*	25,000*
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	635,000	576,000	644,000	259,000	270,000	307,000	304,000
Average Annual Costs	222,300	201,600	225,400	90,700	94,500	107,500	106,400

*GREAT recommended actions

(1) At 5.18.

(2) At 5.28A.

(3) Trucking from 5.28A to 5.28

(4) Clearing barge access channel to 5.28A.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 6

SITE: 5.18

SITE: 5.18

Page 1 of 3

CUT LOCATION: 747.2 - 748.2 (West Newton)

PLACEMENT SITE LOCATION: RM 748.0

TYPE OF PLACEMENT SITE: Permanent _____ Temporary X

ELEVATIONS AT SITE:

Site (1980): 675'
100-year flood: 671.5'
5-year flood: 667'
Flat pool: 660'

ER

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: No

ER

SITE CHARACTER:

% Upland: 100 (existing containment area)
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: Adjacent
Residence: Less than 1 mile
Beneficial Use Site: 0
Other: -

ER

ER

VEGETATION CHARACTER:

Minimal vegetation (old placement site).

SITE OWNER:

Federal

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Probable turtle nesting area.

Socioeconomic: Old material placement site.

Adjacent land use: Navigation channel, Wetlands.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 6
SITE: 5.18

Page 2 of 3

SITE: 5.18

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 667,000
Area at base (acres): 27.5
Height (feet): 15
Length (feet): 3,000
Width (feet): 400
Side slope (ratio): 4:1
Final elevation (feet): 675 (material removed periodically)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 14/40
Volume dredged per job (cubic yards): 39,800
Beneficial use demand (cubic yards): 0
Beneficial Use by: None
Other cuts using sites: 6,7

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 97% medium to fine sand.
Silt (%): 3%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: None
Other: None
Areas and features protected by erosion control:
Excellent fishery and wildlife habitat behind and downstream.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 6
SITE: 5.18

Page 3 of 3

SITE: 5.18

SPECIAL CONDITIONS FOR SITE USE:

Material would have to be removed from site before next seasonal high water.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	27.5	old dredged material
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Channel Maintenance Plan Costs

Cost figures were not calculated for this site because it is a temporary placement site. Material placed at this site must either be immediately removed to another site or removed to another site after material from several dredging jobs has been placed at the site. Cost for rehandling the material will vary according to demand for material, equipment available for removing the material, how much material must be removed during one rehandling operation, and where the material is ultimately placed.

Due to the number of variables affecting the cost of using this temporary site, calculation of cost estimates would not be meaningful for comparing with placement costs at other sites or with other methods.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 7

SITE: 5.26A

SITE: 5.26A

Page 1 of 3

CUT LOCATION: 748.6 - 749.6 (Mule Bend)

PLACEMENT SITE LOCATION: RM 751.2

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 670 (Approximate)
100-year flood: 673.0
5-year flood: 667.0
Flat pool: 660.0

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0
Residence: 2,000'
Beneficial Use Site: 0
Other:

VEGETATION CHARACTER: Bottomland hardwoods

SITE OWNER: Dairyland Power

SPECIAL CONCERNS:

Endangered species habitat: Likely place for wintering bald eagle roost.
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Furbearers, waterfowl nesting, fish spawning.

Socioeconomic: Potential expansion for Dairyland Power.

Adjacent land use: Main channel, electrical power generating plant.

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 7
SITE: 5.26A

Page 2 of 3

SITE: 5.26A

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 500,000
Area at base (acres): 15
Height (feet): 25
Length (feet): 800
Width (feet): 800
Side slope (ratio): -
Final elevation (feet): 686 (Approximate)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 35,800
Beneficial use demand (cubic yards): 923,000
Beneficial Use by: Cochrane, Buffalo, Belvidere Twp, Wis DOT, Buffalo Co.
Other cuts using sites: 5,6,8 (½ Buff. Co. demand assigned to 5.26
or replacement (5.26A or 5.28) and
½ to site 4.02)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: Possibly
Revegetation: No
Other: Removal of material for beneficial uses.
Areas and features protected by erosion control:
Adjacent wetlands and sloughs

DREDGED MATERIAL PLACEMENT

SITE DEVELOPMENT
(Continued)

SITE: 5.26A

SPECIAL CONDITIONS FOR SITE

Detailed economic and environmental impact studies must be completed before any dredging or disposal activities are initiated.

WILDLIFE HABITAT IMPACTS:

Wetlands filled:

Wetlands altered:

Open water filled:

Upland altered:

Endangered Species habitat:

Side channels blocked:

Other:

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological resources:

Historical/Archeological resources:

Historical/Archeological resources:

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Mule Bend
POOL: 5
CUT: 7
SITE: 5.26A

Frequency: 25 %
10 / 40 yrs
Volume per job: 35,800 cy

	TYPES OF DREDGES					
	PIPELINE 20 inch	MECHANICAL			Backhoe 350 H.P.	Clamshell 700 H.P.
		16 inch	12 inch	700 H.P.		
Basic Dredging Operation	\$ 387,000*	\$ 493,000*	\$ 495,000*	\$ 210,000*	\$ 216,000*	\$ 241,000*
Berming Costs	6,000*	9,000*	10,000*	-	-	-
Diking Costs	8,000	7,000	6,000	-	-	-
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	10,000*	10,000*	10,000*	10,000*	10,000*	10,000*
Land Acquisition	10,000	10,000	10,000	10,000	10,000	10,000
Total of GREAT recommended Actions	403,000	512,000	515,000	220,000	226,000	251,000
Average Annual Costs	100,800	128,000	128,800	55,000	56,500	62,8000

*GREAT recommended actions
(1) At 5.21.
(2) Berming at 5.26A.

UNITED STATES GOVERNMENT

FORM 5

WATER RESOURCES DIVISION

FORM 7

DATE 5.24

NO. 1 5.24

FORM 1, 1961

STATION NO. 100.6 - 749.6 (Mile 100.6)

STATION NO. 100.6 - 749.6 (Mile 100.6)

STATION NO. 100.6 - 749.6 (Mile 100.6)

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STATION NO. 100.6 - 749.6 (Mile 100.6)

STATION NO. 100.6 - 749.6 (Mile 100.6)

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 7
SITE: 5.24

Page 2 of 3

SITE: 5.24

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 1,500,000
Area at base (acres): 36
Height (feet): 25
Length (feet): 1,250
Width (feet): 1,250
Side slope (ratio): -
Final elevation (feet): 705 (Approximate)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 35,800
Beneficial use demand (cubic yards): 41,000+
Beneficial Use by: Wabasha Co., Kellogg, (Minn DOT?)
Other cuts using sites:

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: No
Revegetation: No
Other:
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 7
SITE: 5.24

Page 3 of 3

SITE: 5.24

SPECIAL CONDITIONS FOR SITE USE:

Detailed economic and environmental comparison of the 4 selected sites
be completed before use (preferential order may change).

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	36	Agricultural land
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Mule Bend
POOL: 5
CUT: 7
SITE: 5.24

Frequency: 25 %
10 / 40 yrs
Volume per job: 35,800 cy

	TYPES OF DREDGES						
	PIPELINE			MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe		Clamshell	
				350 H.P.	700 H.P.	350 H.P.	700 H.P.
Basic Dredging Operation	\$ 433,000*	\$ 454,000*	\$ 456,000*	\$ -	\$ -	\$ -	\$ -
Berming Costs	6,000*	9,000*	10,000*	-	-	-	-
Diking Costs	8,000	7,000	6,000	-	-	-	-
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	439,000	463,000	466,000	-	-	-	-
Average Annual Costs	109,800	115,800	116,500	-	-	-	-

*GREAT recommended actions

POOL: 5
CUT: 7
SITE: 5.26

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 5
CUT: 7
SITE: 5.26

SITE: 5.26

Page 1 of 3

CUT LOCATION: 748.6 - 749.6 (Mule Bend)

PLACEMENT SITE LOCATION: RM 751.2

TYPE OF PLACEMENT SITE: Permanent ☒ Temporary

ELEVATIONS AT SITE:

Site (1980): 670'
100-year flood: 674'
5-year flood: 667'
Flat pool: 660'

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Less than 250'
Wetland: 0'
Residence: Less than 500'
Beneficial Use Site: 0'
Other: Adjacent to railroad tracks.

VEGETATION CHARACTER:

Varies depending on exact location of site.
Possibly 100% cattails, lotus, and arrowhead.

SITE OWNER:

Dairyland Power Coop.

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Good fishery, waterfowl, furbearer and upland game habitat.
Socioeconomic: Rail loop for power plant.
Adjacent land use: Navigation channel, power plant, railroad line, State highway.

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 7
SITE: 5.26

Page 2 of 3

SITE: 5.26

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 500,000
Area at base (acres): 15
Height (feet): 25
Length (feet): 800
Width (feet): 800
Side slope (ratio):
Final elevation (feet): 685

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 35,000
Beneficial use demand (cubic yards): 931,000
Beneficial Use by: Belvidere Township, Buffalo City, WI DOT, Buffalo County
Other cuts using sites: 5,6,8 ($\frac{1}{2}$ Buff. Co. demand assigned to 5.26
and $\frac{1}{2}$ to site 4.02.)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): (Possible hydraulic rehandling to the site).

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Disposal site located within Alma Power Plant rail loop.
Areas and features protected by erosion control:
N/A

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

CUT: 7

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

SITE: 5.26

(Continued from previous page)

Page 3 of 3

SITE: 5.26

SPECIAL CONDITIONS FOR SITE USE:

Detailed economic and environmental comparison of the 4 selected sites to be completed before use (preferential order may change).

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u> 1, 3, or 4
Wetlands filled:	15	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	0	
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐

Historical/Archeological sites were not found: ☐

Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Mule Bend
POOL: 5
CUT: 7
SITE: 5.26

Frequency: 25 % / 40 yrs
Volume per job: 35,800 cy

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	350 H.P. 700 H.P. Clamshell
Basic Dredging Operation	\$ 440,000*	\$ 562,000*	\$ 564,000*	\$ 241,000*	\$ 251,000*	\$ 275,000* \$ 280,000*
Berming Costs	6,000*	9,000*	10,000*	-	-	-
Diking Costs	8,000	7,000	6,000	-	-	-
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	10,000*	10,000*	10,000*	10,000*	10,000*	10,000*
Land Acquisition	57,000	57,000	57,000	57,000	57,000	57,000*
Total of GREAT recommended Actions	456,000	581,000	584,000	251,000	261,000	285,000 290,000
Average Annual Costs	114,000	145,300	146,000	62,800	65,300	71,300 72,500

*GREAT recommended actions
(1) At 5.21.
(2) Berming at 5.26.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 7

SITE: 5.28

SITE: 5.28

Page 1 of 3

CUT LOCATION: 748.6 - 749.6 (Mule Bend)

PLACEMENT SITE LOCATION:

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 671
100-year flood: 670.8
5-year flood: 664.4
Flat pool: 660.0

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 1,700
Wetland: 1,000
Residence: 1,000
Beneficial Use Site: 0
Other:

VEGETATION CHARACTER: Some trees, grass, shrubs.

SITE OWNER: Private.

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Upland game birds.
Socioeconomic: Abandoned quarry.
Adjacent land use: County road, railroad, agricultural land.

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 7
SITE: 5.28

Page 2 of 3

SITE: 5.28

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 500,000
Area at base (acres): 15
Height (feet): 25
Length (feet): 800
Width (feet): 800
Side slope (ratio): -
Final elevation (feet): 686 (Approximate)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 35,800
Beneficial use demand (cubic yards): 923,000
Beneficial Use by: Cochrane, Buffalo City, Belvidere Twp, Wis DOT, Buffalo
Other cuts using sites: 5,6,8 Co. (½ Buff. Co. demand assigned to 5.26 or
replacement (5.28 or 5.26A) and ½ to site
4.02)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: No
Revegetation: No
Other:
Areas and features protected by erosion control:
N/A

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 7
SITE: 5.28

Page 3 of 3

SITE: 5.28

SPECIAL CONDITIONS FOR SITE USE:

Detailed economic and environmental comparison of the 4 selected sites to be completed before use (preferential order may change).

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	15	Abandoned quarry
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Mule Bend

POOL: 5

CUT: 7

SITE: 5.28

Frequency: 25 %

10/40 yrs

Volume per job: 35,800 cy

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

	TYPES OF DREDGES						
	PIPELINE			MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$331,000	\$377,000	\$379,000	\$154,000	\$145,000	\$179,000	\$195,000
Berming Costs	6,000 ^{(1)*}	9,000 ^{(1)*}	10,000 ^{(1)*}	-	-	-	-
Diking Costs	8,000	7,000	6,000	-	-	-	-
Riprapping Costs	-	-	-	-	-	-	-
Seasonal Removal ²	77,000*	77,000*	77,000*	77,000*	77,000*	77,000*	77,000*
Special Construction ³	25,000*	25,000*	25,000*	25,000*	25,000*	25,000*	25,000*
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	439,000	488,000	491,000	256,000	247,000	281,000	297,000
Average Annual Costs	109,800	122,000	122,800	64,000	61,800	70,300	74,300

*GREAT recommended actions

(1) At 5.21.

(2) Trucking material from 5.28A to 5.28.

(3) Clearing access channel to 5.28A.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 7

SITE: 5.18

SITE: 5.18

Page 1 of 3

CUT LOCATION: 748.6 - 749.6 (Mule Bend)

PLACEMENT SITE LOCATION: RM 748.0

TYPE OF PLACEMENT SITE: Permanent _____ Temporary X _____

ELEVATIONS AT SITE:

Site (1980): 675'
100-year flood: 671.5'
5-year flood: 667'
Flat pool: 660'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100 (existing containment area)
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: Adjacent
Residence: less than 1 mile
Beneficial Use Site: 0'
Other:

VEGETATION CHARACTER: minimal vegetation (old placement site)

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Probable turtle nesting area
Socioeconomic: old material placement site.
Adjacent land use: Navigation channel and wetlands.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 7
SITE: 5.18

Page 2 of 3

SITE: 5.18

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 667,000
Area at base (acres): 27.5
Height (feet): 15
Length (feet): 3,000
Width (feet): 400
Side slope (ratio): 4:1
Final elevation (feet): 675 (material removed periodically)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 35,800
Beneficial use demand (cubic yards): 0
Beneficial Use by: None
Other cuts using sites: 6,7

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: None
Other: None
Areas and features protected by erosion control: Excellent fishery
and wildlife habitat behind and downstream of area.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 7
SITE: 5.18

Page 3 of 3

SITE: 5.18

SPECIAL CONDITIONS FOR SITE USE: Material would have to be removed from site before next seasonal high water.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	27.5	old dredged material
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Channel Maintenance Plan Costs

Cost figures were not calculated for this site because it is a temporary placement site. Material placed at this site must either be immediately removed to another site or removed to another site after material from several dredging jobs has been placed at the site. Cost for rehandling the material will vary according to demand for material, equipment available for removing the material, how much material must be removed during one rehandling operation, and where the material is ultimately placed.

Due to the number of variables affecting the cost of using this temporary site, calculation of cost estimates would not be meaningful for comparing with placement costs at other sites or with other methods.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 8

SITE: 5.26A

SITE: 5.26A

Page 1 of 3

CUT LOCATION: 752.6 - 752.8 (Lower Approach L/D 4)

PLACEMENT SITE LOCATION: RM 751.2

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 670 (approx)
100-year flood: 673.0
5-year flood: 667.0
Flat pool: 660.0

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: adjacent
Wetland: 0'
Residence: 2000'
Beneficial Use Site: 0'
Other:

VEGETATION CHARACTER: bottomland hardwoods

SITE OWNER:

Dairyland Power

SPECIAL CONCERNS:

Endangered species habitat: Likely place for wintering bald eagle roosts
Historical or archeological value: unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Furbearers, waterfowl nesting, fish spawning
Socioeconomic: Potential expansion for Dairyland Power
Adjacent land use: Main channel, electrical power generating plant

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 8
SITE: 5.26A

Page 2 of 3

SITE: 5.26A

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 500,000
Area at base (acres): 15
Height (feet): 25
Length (feet): 800
Width (feet): 800
Side slope (ratio): -
Final elevation (feet): 686 (approx)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 12/40
Volume dredged per job (cubic yards): 8,800
Beneficial use demand (cubic yards): 923,000
Beneficial Use by: Cochrane, Buffalo, Belvidere Twp, Wisconsin DOT, Buffalo
Other cuts using sites: 5,6,7,8 ($\frac{1}{2}$ Buff. Co. demand assigned to 5.26A Co.
and $\frac{1}{2}$ to site 4.02).

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: Minor PCB's
Contaminant Source: Twin Cities, Agricultural

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: possibly
Revegetation: No
Other: Removal of 900,000 cubic yards for beneficial uses
Areas and features protected by erosion control: Adjacent wetlands and sloughs

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 8
SITE: 5.26A

Page 3 of 3

SITE: 5.26A

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites to be completed before use (preferential order may change)

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	15	1
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	15	possible eagle roost
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Lower Approach L/D4

POOL: 5

CUT: 8

SITE: 5.26A

Frequency: 30%

12/40 yrs

Volume per job: 8,800 cy

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

	TYPES OF DREDGES					
	PIPELINE 20 inch	16 inch	12 inch	MECHANICAL		
				Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$217,000*	\$171,000*	\$119,000*	\$ 52,000*	\$ 57,000*	\$ 60,000*
Berming Costs	5,000*	5,000*	2,000*	2,000*	2,000*	2,000*
Diking Costs	11,000	7,000	3,000	-	-	-
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction				0	0	0
Land Acquisition	10,000	10,000	2,000(1)*	10,000	10,000	10,000
Total of GREAT recommended Actions	222,000	176,000	123,000	54,000	59,000	62,000
Average Annual Costs	66,600	52,800	36,900	16,200	17,700	18,600

*GREAT recommended actions

(1) Berming at 5.25.

(2) At 5.26A.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 8

SITE: 5.24

SITE: 5.24

Page 1 of 3

CUT LOCATION: 752.6 - 752.8 (Lower Approach L/D 4)

PLACEMENT SITE LOCATION: RM 750.1

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 680 (approx)
100-year flood: 672.2
5-year flood: 666.6
Flat pool: 660.0

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100
% Wetland:
% Open water:

DISTANCE FROM SITE TO:

Open Water: 750 ft.
Wetland: 200 ft.
Residence: 500 ft.
Beneficial Use Site: 0 ft.
Other:

VEGETATION CHARACTER: Agricultural field

SITE OWNER: Private

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Furbearers, waterfowl feeding

Socioeconomic: Cereal crops

Adjacent land use: Agricultural, wetlands

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 8
SITE: 5.24

Page 2 of 3

SITE: 5.24

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards):	1,500,000
Area at base (acres):	36
Height (feet):	25
Length (feet):	1250
Width (feet):	1250
Side slope (ratio):	-
Final elevation (feet):	705 (approx)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 12/40
Volume dredged per job (cubic yards): 8,800
Beneficial use demand (cubic yards): 41,000+
Beneficial Use by: Wabasha Co., Kellogg, (Minnesota DOT?)
Other cuts using sites: 5,6,7

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: Minor PCB's
Contaminant Source: Twin Cities, Agricultural

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: NO
Revegetation: NO
Other:
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 8
SITE: 5.24

Page 3 of 3

SITE: 5.24

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites to be completed before use (preferential order may change)

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	36	agricultural land
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Channel Maintenance Plan Costs

Cost figures were not calculated for this site because it is a temporary placement site. Material placed at this site must either be immediately removed to another site or removed to another site after material from several dredging jobs has been placed at the site. Cost for rehandling the material will vary according to demand for material, equipment available for removing the material, how much material must be removed during one rehandling operation, and where the material is ultimately placed.

Due to the number of variables affecting the cost of using this temporary site, calculation of cost estimates would not be meaningful for comparing with placement costs at other sites or with other methods.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5

EXISTING CONDITIONS DESCRIPTION

CUT: 8

SITE: 5.26

SITE: 5.26

Page 1 of 3

CUT LOCATION: 752.6 - 752.8 (Lower Approach L/D 4)

PLACEMENT SITE LOCATION: RM 751.2

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 670'
100-year flood: 674'
5-year flood: 667'
Flat pool: 660'

E

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

1D

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: less than 250'
Wetland: 0'
Residence: less than 500'
Beneficial Use Site: 0'
Other: Adjacent to railroad tracks

1D

E

VEGETATION CHARACTER: Varies depending on exact location of site possibly 100% cattails, lotus, and arrowheads.

SITE OWNER: Dairyland Power

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Good fishery, waterfowl, furbearer and upland game habitat

Socioeconomic: Rail loop for power plant

Adjacent land use: Navigation channel, power plant, railroad line, state highway.

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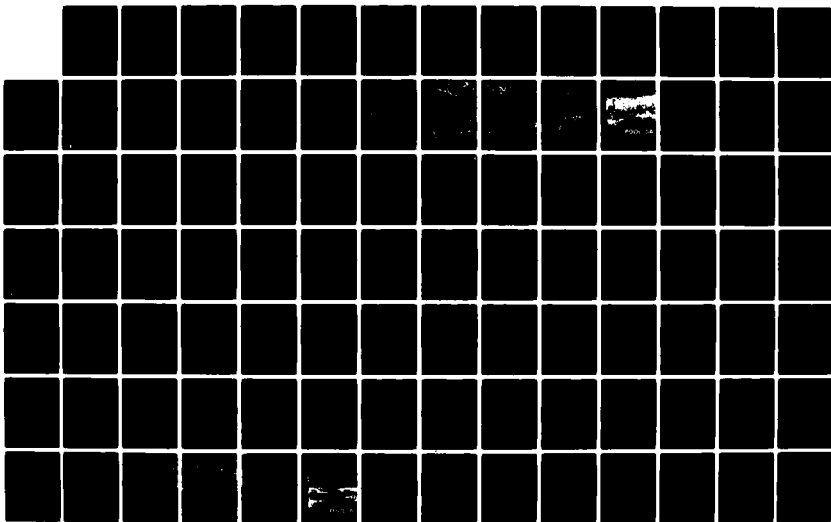
GREAT I STUDY OF THE UPPER MISSISSIPPI RIVER TECHNICAL
APPENDIXES VOLUME 8. (U) GREAT RIVER ENVIRONMENTAL
ACTION TEAM SEP 80

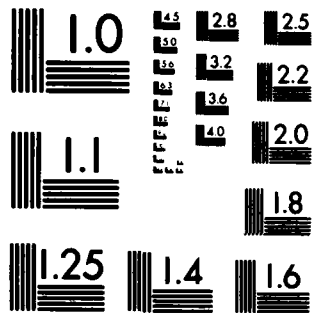
2/4

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 8
SITE: 5.26

Page 2 of 3

SITE: 5.26

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards):	500,000
Area at base (acres):	15
Height (feet):	25
Length (feet):	800
Width (feet):	800
Side slope (ratio):	-
Final elevation (feet):	685

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 12/40
Volume dredged per job (cubic yards): 8,800
Beneficial use demand (cubic yards): 931,000
Beneficial Use by: Belvidere Township, Buffalo City, Wisconsin DOT, Buffalo
Other cuts using sites: 5,6,7 ($\frac{1}{2}$ Buff. Co. demand assigned to Co.
5.26 and $\frac{1}{2}$ to site 4.02)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: Minor PCB's
Contaminant Source: Twin Cities, Agricultural

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Disposal site located within Alma Power Plant rail loop
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 8
SITE: 5.26

Page 3 of 3

SITE: 5.26

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites be completed before use (preferential order may change)

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u> 1,3 or 4
Wetlands filled:	15	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	0	
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Lower Approach L/D4

POOL: 5

CUT: 8

SITE: 5.26

Frequency: 30 %

12/40 yrs

Volume per job: 8,800 cy

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

	TYPES OF DREDGES						
	PIPELINE			MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$ 221,000	\$ 174,000	\$ 113,000	\$ 57,000	\$ 65,000	\$ 63,000	\$ 66,000
Berming Costs	5,000 (2)*	6,000 (2)*	2,000 (2)*	2,000 (1)*	2,000 (2)*	2,000 (2)*	2,000 (2)*
Diking Costs	11,000	7,000	3,000	-	-	-	-
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Constuction	0	0	0	0	0	0	0
Land Acquisition	57,000	57,000	57,000	57,000	57,000	57,000	57,000
Total of GREAT recommended Actions	226,000	180,000	115,000	59,000	67,000	65,000	68,000
Average Annual Costs	67,800	54,000	34,500	17,700	20,100	19,500	20,400

*GREAT recommended actions

(1) At 5.25.

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 5

CUT: 8

SITE: 5.28

SITE: 5.28

Page 1 of 3

CUT LOCATION: 752.6 - 752.8 (Lower approach L/D 4)

PLACEMENT SITE LOCATION: RM 747.0

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 671 (approx)
100-year flood: 670.8
5-year flood: 664.4
Flat pool: 660.0

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 1,700
Wetland: 1,000
Residence: 1,000
Beneficial Use Site: 00
Other:

VEGETATION CHARACTER: Some trees, grass, shrubs

SITE OWNER: Private

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Upland game birds

Socioeconomic: Abandoned quarry

Adjacent land use: county road, railroad, agricultural land

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 8
SITE: 5.28

Page 2 of 3

SITE: 5.28

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 500,000
Area at base (acres): 15
Height (feet): 25
Length (feet): 800
Width (feet): 800
Side slope (ratio): -
Final elevation (feet): 686 (approx)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 12/40
Volume dredged per job (cubic yards): 8,800
Beneficial use demand (cubic yards): 923,000
Beneficial Use by: Cochrane, Buffalo, Belvidere Twp, Wis DOT, Buffalo County
Other cuts using sites: ($\frac{1}{2}$ Buff. Co. demand assigned to 5.26 or replacement (5.28 or 5.26A) and $\frac{1}{2}$ to site 4.02)

DREDGED MATERIAL CHARACTERISTICS:

Sand (Z): 100% medium sand
Silt (Z):
Other (Z):
Contaminants: Minor PCB's
Contaminant Source: Twin Cites, Agricultural

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: No
Revegetation: No
Other:
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5
CUT: 8
SITE: 5.28

Page 3 of 3

SITE: 5.28

SPECIAL CONDITIONS FOR SITE USE: Detailed Economic and environmental comparison of the 4 selected sites to be completed before use (preferential order may change)

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	15	abandoned quarry
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Lower Approach L/D4

POOL: 5

CUT: 8

SITE: 5.28

Frequency: 30%

12 /40 yrs

Volume per job: 8,800 cy

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

	TYPES OF DREDGES					
	PIPELINE	MECHANICAL				
		16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$107,000*	\$110,000*	\$ 99,000*	\$ 46,000*	\$ 47,000*	\$ 52,000*
Berming Costs (1)	2,000*	2,000*	2,000*	-	-	-
Diking Costs	11,000	7,000	3,000	-	-	-
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal (2)	22,000	22,000	22,000	22,000	22,000	22,000
Special Construction (3)	25,000	25,000	25,000	25,000	25,000	25,000
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	109,000	112,000	101,000	46,000	47,000	52,000
Average Annual Costs	32,700	33,600	30,300	13,800	14,100	15,600

*GREAT recommended actions

(1) At 5.25.

(2) Trucking from 5.28A to 5.28.

(3) Clearing access channel.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5 Cut 1

Alternative Plan	Selected, EQ	NED, EQ MPFW/OG	RFFP		
Placement Site No.	5.30	5.03	5.24		
Site Capacity (cy)	1,659,500 (with islands)	183,000	1,500,000		
Site Acreage	76	8	36		
Site Height (ft)	15	15	25		
Potential Beneficial use removal (cy)	1,659,500	183,000	41,000		
Conditions ¹ favoring use of site	3	21	21		
	4	3	2		
		4	24		
	7	6	5		
	30	7	10		
	12	8	12		
		9	33		
	33	30	35*		
	15	12	16		
	16	33			
		15			
		16			
Conditions ¹ adverse to use of site	41	42	43		
	62	65	47		
	65	71	68		
	66	54	69		
	68		71		
	49		54		
	71				
	54				
			* partial		

¹ Code numbers in columns represent conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5 Cut 2

Alternative Plan	Selected, EQ	NED, MPFW/OG	RFFP		
Placement Site No.	5.30	5.06	5.24		
Site Capacity (cy)	1,659,500 (with islands)	378,000	1,500,000		
Site Acreage	76	16	36		
Site Height (ft)	15	15	25		
Potential Beneficial use removal (cy)	all material	-	41,000		
Conditions ¹ favoring use of site	3 4 6 7 8 9 30 12 33 15 16	21 6 7 8 9 11 32 33 16	21 2 24 5 10 12 33* 35 16		
Conditions ¹ adverse to use of site	41 62 65 71 54	62 43 64 65 50 74 75	43 66 47 68 69 71 54 * partial		

¹ Code numbers in columns represent conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5 Cut 3

Alternative Plan	Selected, EQ	NED, MPFW/OG	RFFP		
Placement Site No.	5.30	5.07	5.24		
Site Capacity (cy)	1,659,500 (with islands)	489,000	1,500,000		
Site Acreage	76	20	36		
Site Height (ft)	15	15	25		
Potential Beneficial use removal (cy)	all material	-	41,000		
Conditions ¹ favoring use of site	3 4 6 7 8 9 30 12 33 15 16	21 6 7 8 9 11 32 33 16	21 2 24 5 10 12 33* 35 16		
Conditions ¹ adverse to use of site	41 62 65 71 54	62 43 64 65 50 74 75	43 66 47 68 69 71 54 * partial		
¹ Code numbers in columns represent conditions listed on pages _____.					

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5 Cut 4

Alternative Plan	Selected, EQ	NED, MPFW/OG	RFFP		
Placement Site No.	5.30	5.12	5.24		
Site Capacity (cy)	1,659,500 (with islands)	767,000	1,500,000		
Site Acreage	76	24	36		
Site Height (ft)	15	20	25		
Potential Beneficial use removal (cy)	all material	-	41,000		
Conditions ¹ favoring use of site	3 4 6 7 8 9 30 12 33 15 16	6 7 8 29 11 33	21 2 24 5 10 12 33* 35 16		
Conditions ¹ adverse to use of site	41 62 65 71 54	41 42 43 64 65 70 72 54 75* 76 * capacity within cont- ainment site not adequate.	66 47 68 49 71 54 * partial		
¹ Code numbers in columns represent conditions listed on pages _____.					
		102			

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5 Cut 5

Alternative Plan	Selected	Selected, EQ RFFP	Selected	Selected	MED, MPFW/OG
Placement Site No.	5.26A	5.24	5.26	5.28	5.14
Site Capacity (cy)	500,000	1,500,000	500,000	500,000	648,000
Site Acreage	15	36	15	15	16
Site Height (ft)	25	25	25	25	25
Potential Beneficial use removal (cy)	923,000	41,000	923,000	923,000	-
Conditions ¹ favoring use of site	21 4 25 11(?) 12 33 54 35* 36	21 2 24 5 10 12 33 35* 16	21 2 4 5 10 32 33 35* 36	2 4 5 10 11 12 33 35* 36	1 6 7 8 9 11 32 33 54 16
Conditions ¹ adverse to use of site	62 43 66 47 68 49 50	66 67 68 49 71 54	63 66 47 68 49 71 54	41 43 66 47 68 69 74	62 43 64 65 70 75
<div> <div>* if site is expanded would have sufficient capacity without beneficial use.</div> <div>* partial</div> <div>* if site is expanded would have sufficient capacity without beneficial use.</div> <div>* if site is expanded would have sufficient capacity without beneficial use.</div> </div> <div> <div>1 Code numbers in columns represent conditions listed on pages _____.</div> <div>103</div> <div>R95</div> </div>					

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5 Cut 6

Alternative Plan	Selected	Selected, EQ	Selected	Selected RFFP	NED, MPFW/OG
Placement Site No.	5.26A	5.24	5.26	5.28	5.18 ^{2/}
Site Capacity (cy)	500,000	1,500,000	1,500,000	500,000	667,000
Site Acreage	15	36	15	15	27.5
Site Height (ft)	25	25	25	25	15
Potential Beneficial use removal (cy)	923,000	41,000	923,000	923,000	-
Conditions ¹ favoring use of site	21 4 25 11(?) 12 33 54 35* 36	21 2 24 5 10 12 33 35* 16	21 2 4 5 10 32 33 35* 36	2 4 5 10 11 12 33 35* 36	1 26 7 28 9 30 11 32 33
Conditions ¹ adverse to use of site	62 43 66 47 68 49 50	66 47 68 49 71 54	63 66 47 68 49 71 54	41 43 66 47 68 69 74	42 43 64 65 75* 76
<p>* If site is Expanded, would have sufficient capacity without beneficial use</p> <p>* partial</p> <p>* if site is expanded, would have sufficient capacity without beneficial use.</p> <p>* if site is expanded, would have sufficient capacity without beneficial use.</p> <p>* capacity with in containment site is not adequate.</p> <p>¹ Code numbers in columns represent conditions listed on pages ____.</p> <p>^{2/} temporary site</p>					

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5 Cut 7

Alternative Plan	Selected	Selected, EQ	Selected	Selected	NED, MPFW/O
Placement Site No.	5.26A	5.24	5.26	5.28	5.21
Site Capacity (cy)	500,000	1,500,000	500,000	500,000	378,000
Site Acreage	15	36	15	15	16
Site Height (ft)	25	25	25	25	15
Potential Beneficial use removal (cy)	923,000	41,000	923,000	923,000	-
Conditions ¹ favoring use of site	21 4 25 11(?) 12 33 35* 36	21 2 4 5 10 12 33* 35 16	21 2 4 5 10 32 33 35* 36	2 4 5 10 11 12 33 35* 36	1 6 7 8 9 11 32 33 16
Conditions ¹ adverse to use of site	62 43 66 47 68 49 50 * If site is expanded, would have sufficient capacity without beneficial use.	46 47 48 49 71 54 * Partial	63 66 47 68 49 71 54 * If site is expanded, would have sufficient capacity without beneficial use.	41 43 66 47 68 69 74 * If site is expanded, would have sufficient capacity without beneficial use.	62 63 64 65 70 54 75

¹ Code numbers in columns represent conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5 Cut 8

Alternative Plan	Selected	Selected, EQ RFFP	Selected	Selected	NED
Placement Site No.	5.26A	5.24	5.26	5.28	5.25
Site Capacity (cy)	500,000	1,500,000	500,000	500,000	83,000
Site Acreage	15	36	15	15	3.4
Site Height (ft)	25	25	25	25	15
Potential Beneficial use removal (cy)	923,000	41,000	923,000	923,000	-
Conditions ¹ favoring use of site	21 4 25 11(?) 12 33 35* 36	21 2 4 5 10 12 33 35* 16	21 2 4 5 10 32 33 35* 36	2 4 5 10 11 12 33 35* 36	1 6 7 8 9 11 32 33
Conditions ¹ adverse to use of site	62 43 46 47 48 49 50 54	46 47 48 49 71 54	63 46 47 48 49 71 54	41 43 66 47 68 69 74	42 43 64 65 50 54 75 76
<div> <div> * If site is expanded, would have sufficient capacity without beneficial use. </div> <div> * Partial </div> <div> * If site is expanded, would have sufficient capacity without beneficial use. </div> <div> * If site is expanded, would have sufficient capacity without beneficial use. </div> </div> <div> ¹ Code numbers in columns represent conditions listed on pages _____. </div>					

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5 Cut 8 (Con't)

Alternative Plan	MPFW/OG				
Placement Site No.	5.29				
Site Capacity (cy)	7,400				
Site Acreage	0.2				
Site Height (ft)	20				
Potential Beneficial use removal (cy)	923,000				
Conditions ¹ favoring use of site	21 22 4 5 26 28 29 30 11 12 33 35				
Conditions ¹ adverse to use of site	43 47 54 56				
<p>¹ Code numbers in columns represent conditions listed on pages ____.</p>					

Key to Conditions Used in Site Comparisons

1. Recreation enhancement
2. Remove from floodplain
3. Fish and wildlife enhancement
4. Beneficial use identified
5. Existing road access
6. Adjacent to cut
7. No land acquisition required
8. Provides flexibility of equipment
9. Least cost to dredge
10. No erosion potential
11. No special construction required
12. No diking of berming
13. No water quality concerns
14. Aesthetic enhancement
15. Beneficial use on the site
16. Sufficient capacity on the site

21. No adverse impacts on recreation use
22. Potential for removal from floodplain
23. No adverse fish and wildlife impacts
24. Potential for identifying a beneficial user
25. Road access can be constructed
26. Within $\frac{1}{2}$ mile of cut (easy reach of cutterhead dredges)
27. No apparent problem in acquiring land or easement
28. Slight limitation on equipment choice
29. Less costly than dredging to most other sites
30. Some erosion potential
31. (Unused)
32. Berming required
33. No water quality concern expected
34. (Unused)
35. Know of area where material can be put to beneficial use
36. Sufficient capacity site but less impact if beneficial use demand is developed

- 41. Some adverse impacts on recreation use
- 42. In floodplain - no effect on flood flows
- 43. Some adverse impacts on fish and wildlife
- 44. No suspected beneficial user can be identified
- 45. Poor access to the site
- 46. Within 2 miles of cut (barely within reach of hydraulic dredges)
- 47. Land or easement acquisition required
- 48. Equipment choice limited to just a few options
- 49. More costly than dredging to most of the other sites
- 50. Severe erosion potential
- 51. (Unused)
- 52. Diking required
- 53. Suspected water quality concerns
- 54. Some aesthetic problems
- 55. Potential market for beneficial use suspected but not identified
- 56. Sufficient capacity on site with removal by identified users

- 61. Severe adverse impacts on recreation use
- 62. Placement would cause suspected constriction on flood flows
- 63. Severe adverse impacts on fish and wildlife
- 64. No potential for identifying beneficial user
- 65. No access to the site
- 66. Beyond 2 miles from cut (cannot be reached directly by cutterhead dredges)
- 67. Land or easement acquisition required but does not seem likely
- 68. Severe restrictions on choice of equipment
- 69. Most costly to dredge
- 70. Severe erosion potential with severe consequences if failure occurs
- 71. Special construction required to use the site
- 72. Berming or diking required with severe consequences if failure occurs
- 73. Known water quality concerns
- 74. Adverse aesthetic impacts
- 75. No potential market for beneficial use
- 76. Sufficient capacity on site only if potential beneficial use, not now identified, develops

LEGEND

RECOMMENDED CHANNEL MAINTENANCE PLAN

5 -

—



DEPT
3,4,5

ALTERNATIVE MATERIAL PLACEMENT PLANS



4.09

— Alternative placement site

— Site number

POOL 5

DREDGE CUT	ALTERNATIVE PLACEMENT PLANS			
	MPFW/OG	NED	EQ	RFFP
1	5.03	5.03	5.30/5.03	5.24
2	5.06	5.06	5.30	5.24
3	5.07	5.07	5.30	5.24
4	5.12	5.12	5.30	5.24
5	5.14	5.14	5.24	5.24
6	5.18	5.18	5.24	5.28
7	5.21	5.21	5.24	5.22
8	5.29	5.25	5.24	5.24

M = Most probable future without GREAT

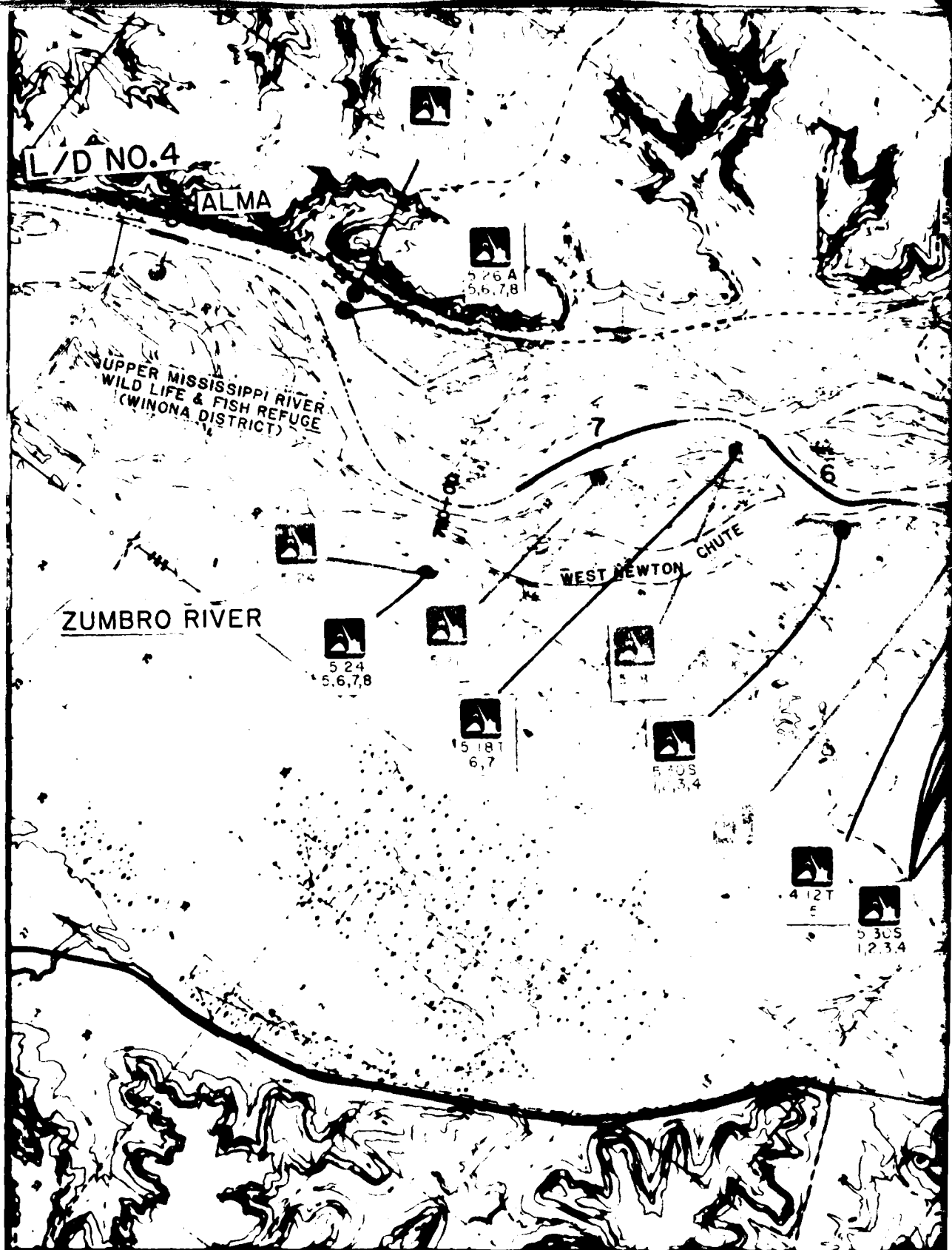
N = National economic development

E = Environmental quality

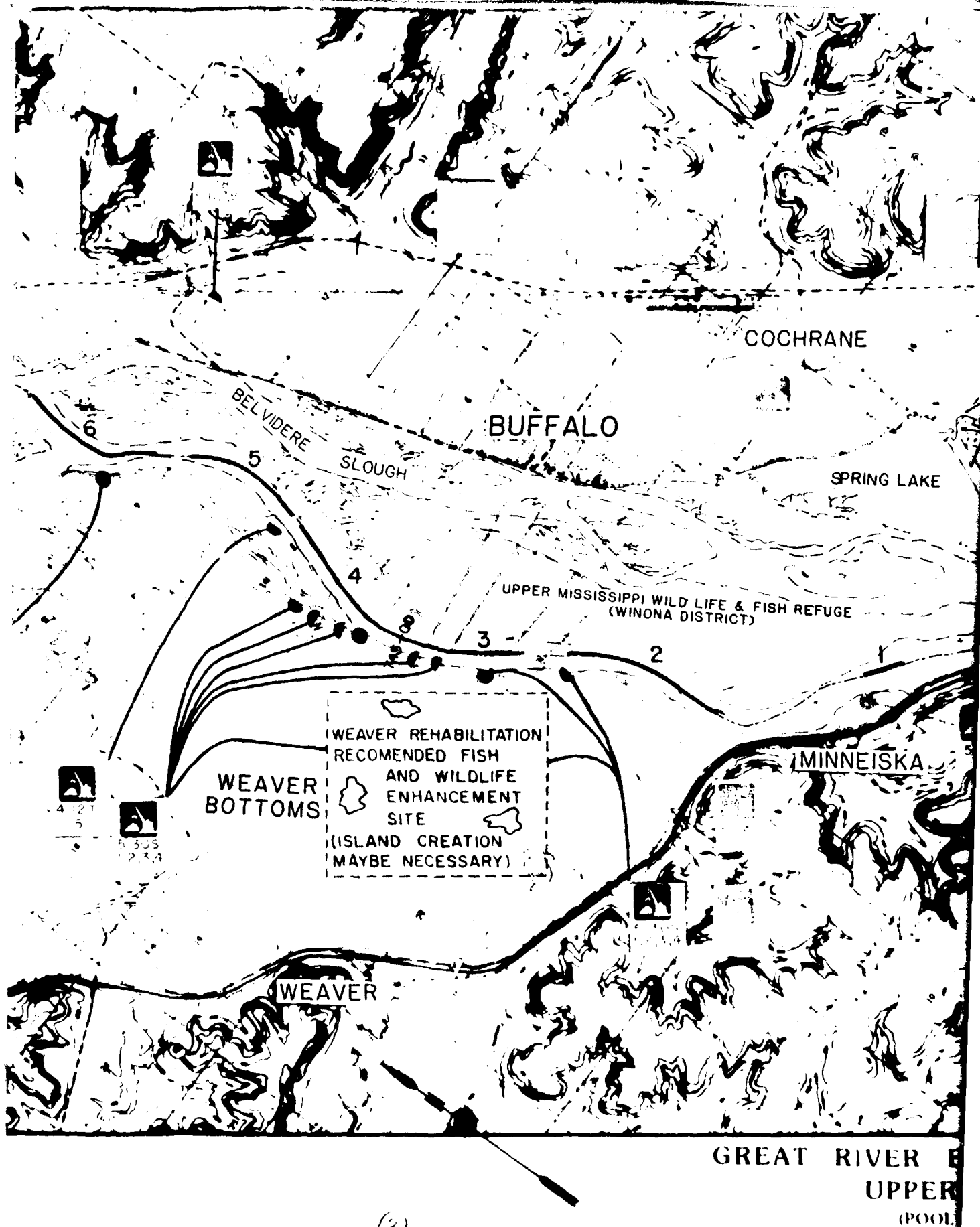
R = Removal from floodplain

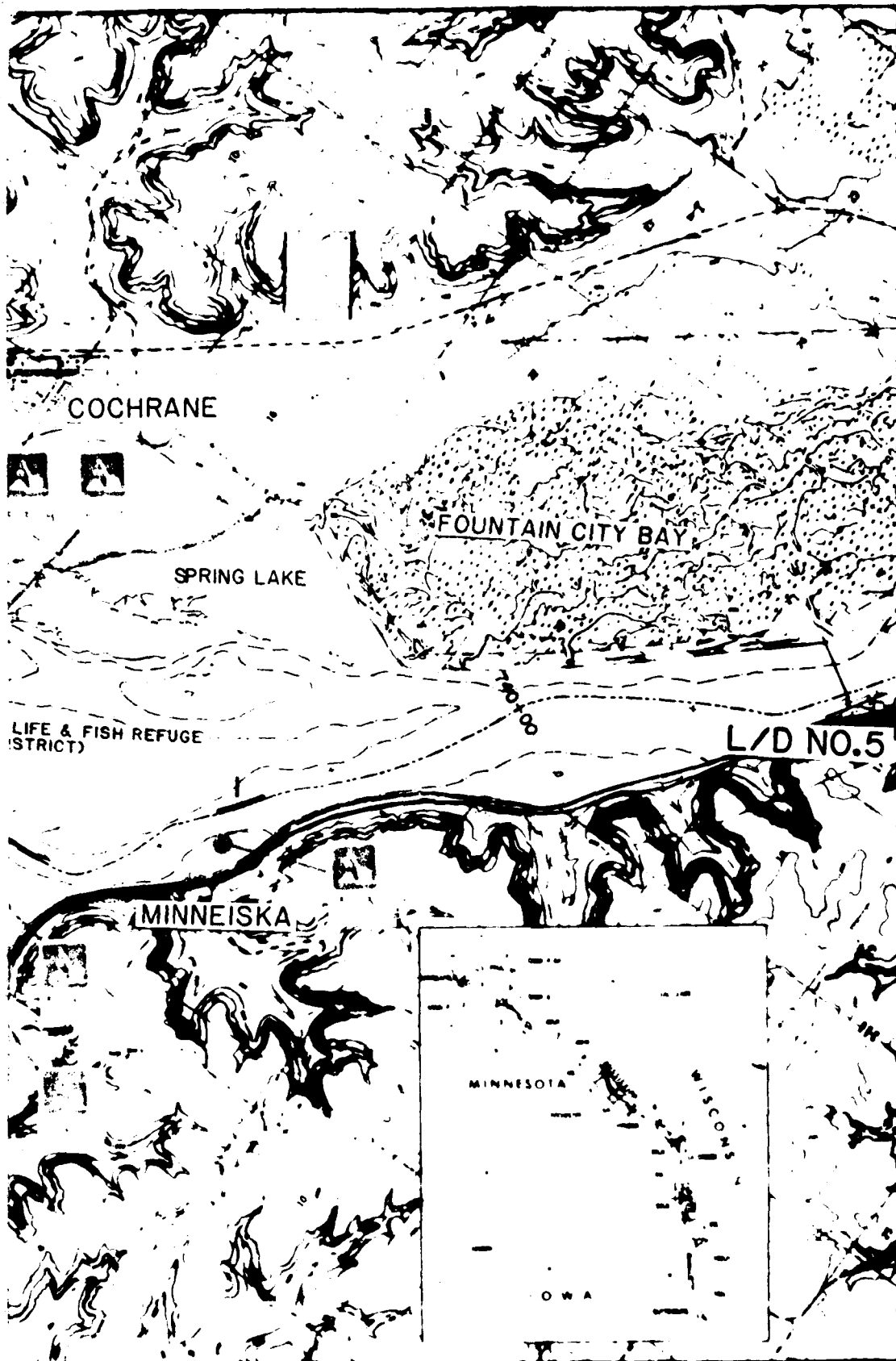
SCALE: 1"=4,000'

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1989



FLOODWAY DESIGNATED BY LOCAL ORDINANCE





**GREAT RIVER ENVIRONMENTAL ACTION TEAM
UPPER MISSISSIPPI RIVER**

(POOL 5 MILE 738 TO MILE 753) (3)



POOL 5A

CHANNEL MAINTENANCE PLAN SUMMARY

POOL 5A.

Dredge Cut	MPFMC CY @ 1985-0225	Selected Site	NED Site	EQ Site	RFTF Site	MPFMC Site	MPFMC CY @ 1985-2025	Temporary Site
1. Upper Approach to L/D 5A	451,500	5A.32/5A.25	5A.04	5A.35	5A.19	5A.04	487,000	--
2. Wild's Bend	276,000	5A.32/5A.25	5A.08	5A.35	5A.19	5A.08	303,000	5A.08
3. Head at Betsy Slough	461,000	5A.32	5A.25	5A.25/5A.27/ 5A.33	5A.25/5A.27/ 5A.33	5A.32	506,500	--
4. Fountain City	407,500	5A.25	5A.34	5A.20/5A.27/ 5A.33	5A.20	5A.34	448,500	5A.14
5. Island 58	724,000	5A.23/5A.36	5A.14	5A.27/5A.33/ 5A.20/5A.21	5A.27/5A.33/ 5A.20/5A.21	5A.14	792,000	5A.14
6. Lower Approach to L/D 5	49,500 2,369,500	5A.23	5A.23	5A.27/5A.33/ 5A.20/5A.21	5A.27/5A.33/ 5A.20/5A.21	5A.23	55,000 2,537,000	--

SELECTED PLAN SUMMARY

Total Volume Dredged (cy)	- 2,369,500
Beneficial Use (cy) Potential from Selected Sites	- 104,800
Total Area (acres)	- 49
No. of sites with:	
Recreation Enhancement	- 2
Cultural Resources Impacts	- 1
Wetlands Affected:	
Types 1, 2 (acres)	- 19
Types 3, 4, 5 (acres)	- 29

Table 2
Pool 5A Dredging Volumes

Item	Cut 1			Cut 2			Cut 3	
	With GREAT	Without GREAT		With GREAT	Without GREAT		With GREAT	Without GREAT
Cut Name	Upper Approach L/D 5A			Wilds Bend			Head of Betsy Slough	
1955 - 1974 average annual dredging volume	15,200	15,200		10,800	10,800		14,400	14,400
Bend width changes (percent)	-	-		-	-		+25	+25
Adjusted average annual volume	15,200	15,200		10,800	10,800		18,000	18,000
Changes for 1986 - 2000 (percent)	-24 (1)	-9 (1)		-34	-19		-34	-19
Adjusted average annual volume	11,600	13,800		7,100	8,700		11,900	14,600
Total volume dredged, 1986 - 2000	174,000	207,000		106,500	130,500		178,500	219,000
Change for 2001 - 2025 (percent)	-27 (1)	-26 (1)		-37	-36		-37	-36
Adjusted average annual volume	11,100	11,200		6,800	6,900		11,300	11,500
Total volume dredged, 2001 - 2025	277,500	280,000		170,000	172,500		282,500	287,500
Total volume dredged, 1986 - 2025	451,500	487,000		276,000	303,000		461,000	506,500
Frequency of dredging (percent)	25	25		35	35		35	35
Expected number of dredging jobs (1986 - 2025)	10	10		14	14		14	14
Average dredging volume per job	45,200	48,700		19,800	21,600		32,900	36,200

(1) Cut in approach to rigid structure.

Note: All volumes in Cubic Yards

Table 2
Pool 5A Dredging Volumes

Item	Cut 4		Cut 5		Cut 6	
	With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT
Cut Name	Fountain City		Island 58		Lower Approach L/D 5	
1955 - 1974 average annual dredging volume	15,900	15,900	28,200	28,200	1,700	1,700
Bend width changes (percent)	-	-	-	-	-	-
Adjusted average annual volume	15,900	15,900	28,200	28,200	1,700	1,700
Changes for 1986 - 2000 (percent)	-34	-19	-34	-19	-24 (1)	-9 (1)
Adjusted average annual volume	10,500	12,900	18,600	22,800	1,300	1,500
Total volume dredged, 1986 - 2000	157,500	193,500	279,000	342,000	19,500	19,500
Change for 2001 - 2025 (percent)	-37	-36	-37	-36	-27 (1)	-26 (1)
Adjusted average annual volume	10,000	10,200	17,800	18,000	1,200	1,300
Total volume dredged, 2001 - 2025	250,000	255,000	445,000	450,000	30,000	32,500
Total volume dredged, 1986 - 2025	407,500	448,500	724,000	792,000	49,500	55,000
Frequency of dredging (percent)	30	30	50	50	5	5
Expected number of dredging jobs (1986 - 2025)	12	12	20	20	2	2
Average dredging volume per job	34,00	37,400	36,200	39,600	24,800	27,500

(1) Cut in approach to rigid structure.

Note: All volumes in Cubic Yards

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 5A

CUT: 1

SITE: 5A.32

SITE: 5A.32

Page 1 of 3

CUT LOCATION: 728.5 -729.5 (Upper Approach L/D 5A)

PLACEMENT SITE LOCATION: RM 732

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 610'
100-year flood: 666.5'
5-year flood: 657'
Flat pool: 650.4'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): No (flood fringe)
Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: less than 1/4 mile
Wetland: 0'
Residence: less than 1,000'
Beneficial Use Site: 0'
Other: site is in an industrially developed area between rail line and state highway

VEGETATION CHARACTER: Bottomland hardwoods, aquatic vegetation

SITE OWNER: City of Fountain City

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: Existing drainage ditch should not be blocked

EXISTING USE OF SITE:

Fish and Wildlife: Fish spawning, furbearers, and waterfowl nesting
Socioeconomic: Potential for industrial development, limited recreation
Adjacent land use: Navigation channel, state highway

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5A
CUT: 1
SITE: 5A.32

Page 2 of 3

SITE: 5A.32

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards):	1,366,000
Area at base (acres):	34
Height (feet):	25
Length (feet):	2600
Width (feet):	550
Side slope (ratio):	-
Final elevation (feet):	695

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 45,200
Beneficial use demand (cubic yards): 40,000 +
Beneficial Use by: Fountain City, Milton & Buffalo Townships
Other cuts using sites: 1,2,3 (Buffalo Co. beneficial use assigned to 4.02 and 5.26A)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% coarse to fine sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No. (may rehandle material to site)

EROSION CONTROL NEEDED:

Riprap: Yes (along western edge of placement site)
Revegetation: None
Other: Material should be continuously available for beneficial use removal,
Areas and features protected by erosion control: Adjacent wetlands
Adjacent wetlands

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5A

CUT: 1

SITE: 5A.32

Page 3 of 3

SITE: 5A.32

SPECIAL CONDITIONS FOR SITE USE: Retain Vegetation Buffer Strip

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	5	1
	29	3 and 4
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Upper Approach L/D 5A

POOL: 5A

CUT: 1

SITE: 5A.32

Frequency: 25%

10/40 yrs

Volume per job: 45,200 cy

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

	TYPES OF DREDGES					
	PIPELINE 20 inch	MECHANICAL			Backhoe 350 H.P.	Clamshell 700 H.P.
		16 inch	12 inch	700 H.P.	350 H.P.	700 H.P.
Basic Dredging Operation	\$488,000*	\$502,000*	\$518,000*	\$244,000*	\$247,000*	\$277,000*
Berming Costs (2)	8,000*	8,000*	8,000*	8,000*	8,000*	8,000*
Diking Costs	8,000	8,000	7,000	-	-	-
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction (1)	5,000*	7,000*	8,000*	0	0	0
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	501,000	516,000	534,000	252,000	255,000	285,000
Average Annual Costs	125,300	129,000	133,500	63,000	63,800	71,300

*GREAT recommended actions

(1) Berming at 5A.04

(2) Berming at 5A.32

NOTE: Trucking from 5A.25 to 5A.32 would cost approximately \$97,000.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5A

EXISTING CONDITIONS DESCRIPTION

CUT: 1

SITE: 5A.25

SITE: 5A.25

Page 1 of 3

CUT LOCATION: 728.5 -729.5

PLACEMENT SITE LOCATION: RM 732.0

TYPE OF PLACEMENT SITE: Permanent X Temporary

ELEVATIONS AT SITE:

Site (1980): 665'
100-year flood: 666.5'
5-year flood: 657'
Flat pool: 650.4'

EE

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: No

RD

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0
Residence: less than 1,000'
Beneficial Use Site: 0
Other: Riprap and wing dams are in immediate downstream vicinity

RD

ER

VEGETATION CHARACTER: Bottomland, hardwoods and willows

SITE OWNER: Private (Elmer Gotz)

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Dredged material placement

Adjacent land use: Navigation Channel, Railroad, Private home

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5A
CUT: 1
SITE: 5A.25

Page 2 of 3

SITE: 5A.25

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 220,000
Area at base (acres): 6
Height (feet): 25
Length (feet): 900
Width (feet): 300
Side slope (ratio): 4:1
Final elevation (feet): 630

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 45,200
Beneficial use demand (cubic yards): 40,000 (Combined 5A.25 and 5A.32 demand)
Beneficial Use by: Fountain City, Milton & Buffalo Townships (Buff. Co. demand assigned to 4.02 and 5.26A)
Other cuts using sites: 2,4

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% coarse to fine sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry):
Hydraulic (in slurry):

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: None
Other: None
Areas and features protected by erosion control: Downstream riprap and wing dam (fishery habitat) coverage

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5A

CUT: 1

SITE: 5A.25

Page 3 of 3

SITE: 5A.25

SPECIAL CONDITIONS FOR SITE USE: Material must be removed to return capacity.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	5	1
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	1*	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

*Site has already been partially used for material placement.

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Upper Approach L/D 5A

POOL: 5A
CUT: 1
SITE: 5A.25

Frequency: 25%
10/40 yrs
Volume per job: 45,200 cy

TYPES OF DREDGES

PIPELINE	MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.
				350 H.P.
				700 H.P.
				Clamshell 700 H.P.

Basic Dredging Operation	\$402,000*	\$428,000*	\$445,000*	\$190,000*	\$194,000*	\$230,000*	\$221,000*
Berming Costs	5,000*(1)	7,000*(1)	8,000*(1)	-	-	-	-
Diking Costs	8,000	8,000	7,000	-	-	-	-
Riprapping Costs	80,000	80,000	80,000	80,000	80,000	80,000	80,000
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	5,000*	5,000*	5,000*	5,000*	5,000*	5,000*	5,000*
Total of GREAT recommended Actions	412,000	440,000	458,000	195,000	199,000	235,000	226,000
Average Annual Costs	103,000	110,000	114,500	48,800	49,800	58,800	56,500

*GREAT recommended actions

(1) At 5A.04

DREDGED MATERIAL PLACEMENT SITE

POOL: 5A

EXISTING CONDITIONS DESCRIPTION

CUT: 2

SITE: 5A.32

SITE: 5A.32

Page 1 of 3

CUT LOCATION: 730.0 - 730.8 (Wild's Bend)

PLACEMENT SITE LOCATION: RM 732

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 610'
100-year flood: 666.5'
5-year flood: 657'
Flat pool: 650.4'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): No (flood fringe)
Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Less than 1/4 mile
Wetland: 0'
Residence: less than 1,000'
Beneficial Use Site: 0
Other: Site is in an industrially developed area between rail line and state highway.

VEGETATION CHARACTER: Bottomland hardwoods, aquatic vegetation

SITE OWNER: City of Fountain City

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: Existing drainage ditch should not be blocked.

EXISTING USE OF SITE:

Fish and Wildlife: Fish spawning, furbearers, and waterfowl nesting
Socioeconomic: Potential for industrial development, limited recreation
Adjacent land use: Navigation Channel, state highway

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5A
CUT: 2
SITE: 5A.32

Page 2 of 3

SITE: 5A.32

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 1,366,000
Area at base (acres): 34
Height (feet): 25
Length (feet): 2600
Width (feet): 550
Side slope (ratio): -
Final elevation (feet): 695

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 14/40
Volume dredged per job (cubic yards): 19,800
Beneficial use demand (cubic yards): 40,000+
Beneficial Use by: Fountain City, Milton & Buffalo Township
Other cuts using sites: (Buffalo Co. beneficial use assigned to
4.02 and 5.26A)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 99% medium sand
Silt (%): 1%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X (partially)

EROSION CONTROL NEEDED:

Riprap: Yes (along western edge of placement site)
Revegetation: None
Other: Material should be continuously available for beneficial use removal,
Areas and features protected by erosion control: Adjacent wetlands

DREDGED MATERIAL PLACEMENT SITE

POOL: 5A

CUT: 2

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

SITE: 5A.32

(Continued from previous page)

Page 3 of 3

SITE: 5A.32

SPECIAL CONDITIONS FOR SITE USE: Retain Vegetative Buffer Strip

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	5	1
	29	3 and 4
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Wild's Bend

POOL: 5A
CUT: 2
SITE: 5A.32

Frequency: 35%
14/40 yrs
Volume per job: 21,600 cy

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

	TYPES OF DREDGES					
	PIPELINE				MECHANICAL	
		16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	350 H.P. 700 H.P. Clamshell
Basic Dredging Operation	\$344,000*	\$250,000*	\$246,000*	\$100,000*	\$113,000*	\$137,000* \$128,000*
Berming Costs	-	5,000*(1)	6,000*(1)	-	-	-
Diking Costs	-	6,000	5,000	-	-	-
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	9,000*(2)	6,000*(2)	6,000*(2)	6,000*(2)	6,000*(2)	6,000*(2) 6,000*(2)
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	353,000	261,000	258,000	106,000	119,000	143,000 134,000
Average Annual Costs	123,600	91,400	90,300	37,100	41,700	50,100 46,900

*GREAT recommended actions

- (1) At 5A.08
(2) Berming at 5A.32

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 5A
CUT: 2
SITE: 5A.25

SITE: 5A.25

Page 1 of 3

CUT LOCATION: 730.0 - 730.8

PLACEMENT SITE LOCATION: RM 732.0

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 665'
100-year flood: 666.5'
5-year flood: 657'
Flat pool: 650.4'

1E

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: No

1D

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0
Residence: less than 1,000'
Beneficial Use Site: 0
Other: Riprap and wing dams are in immediate downstream vicinity

1D

1E

VEGETATION CHARACTER: Bottomland, hardwood and willows

SITE OWNER: Private (Elmer Gotz)

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Minimal
Socioeconomic: Dredged material placement
Adjacent land use: Navigation Channel, Railroad, Private home

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5A
CUT: 2
SITE: 5A.25

Page 2 of 3

SITE: 5A.25

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 220,000
Area at base (acres): 6
Height (feet): 25
Length (feet): 900
Width (feet): 300
Side slope (ratio): 4:1
Final elevation (feet): 630

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 14/40
Volume dredged per job (cubic yards): 19,800
Beneficial use demand (cubic yards): 40,000 (Combined 5A.25 and 5A.32 demand)
Beneficial Use by: Fountain City, Milton & Buffalo Townships (Buff. Co. demand assigned to 4.02 and 5.26A)
Other cuts using sites: 1,2,4

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 99% medium sand
Silt (%): 1%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry):
Hydraulic (in slurry):

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: None
Other: None
Areas and features protected by erosion control: Downstream riprap and wing dam (fishery habitat) coverage.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5A
CUT: 2
SITE: 5A.25

Page 3 of 3

SITE: 5A.25

SPECIAL CONDITIONS FOR SITE USE: Material must be removed to retain capacity.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	5*	1
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	1*	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

* Site has already been partially used for material placement.

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Wild's Bend

POOL: 5A

CUT: 2

SITE: 5A.25

Frequency: 35%

14/40 yrs

Volume per job: 21,600 cy

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

PIPELINE	TYPES OF DREDGES				
	MECHANICAL				Clamshell
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	

Basic Dredging Operation	\$344,000*	\$237,000*	\$232,000*	\$ 79,000*	\$ 87,000*	\$105,000*	\$102,000*
Berming Costs	-	5,000*(1)	6,000*(1)	-	-	-	-
Diking Costs	-	6,000	5,000	-	-	-	-
Riprapping Costs	80,000	80,000	80,000	80,000	80,000	80,000	80,000
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	5,000*	5,000*	5,000*	5,000*	5,000*	5,000*	5,000*
Total of GREAT recommended Actions	349,000	247,000	243,000	84,000	92,000	110,000	107,000
Average Annual Costs	122,200	86,500	85,100	29,400	32,200	38,500	37,500

*GREAT recommended actions

(1) At 5A.08

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 5A

CUT: 2

SITE: 5A.08

SITE: 5A.08

Page 1 of 3

CUT LOCATION: 730.0 - 730.8 (Wild's Bend)

PLACEMENT SITE LOCATION: 730.5 LB

TYPE OF PLACEMENT SITE: Permanent _____ Temporary X _____

ELEVATIONS AT SITE:

Site (1980): 663.0'

100-year flood: 663.9'

5-year flood: 656.5'

Flat pool: 651.0'

FLOOD STAGE FACTORS:

Site within floodplain: Yes

Site within floodway (effective flow area): Yes

Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 50

% Wetland: 50

% Open water:

DISTANCE FROM SITE TO:

Open Water: Adjacent

Wetland: 0'

Residence: mile

Beneficial Use Site: 3/4 mile

Other:

VEGETATION CHARACTER: ~ Partially bottomland hardwoods, partially willows and grasses.

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None

Historical or archeological value: Unknown

Other:

EXISTING USE OF SITE:

Fish and Wildlife: Turtle nesting, fish spawning, waterfowl nesting

Socioeconomic: Dredged material disposal site.

Adjacent land use: Main channel, backwaters.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5A
CUT: 2
SITE: 5A.08

Page 2 of 3

SITE: 5A.08

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards):	296,000
Area at base (acres):	9
Height (feet):	20
Length (feet):	-
Width (feet):	-
Side slope (ratio):	-
Final elevation (feet):	673

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged:	14/40
Volume dredged per job (cubic yards):	19,800
Beneficial use demand (cubic yards):	None
Beneficial Use by:	No access
Other cuts using sites:	None

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 99% medium sand
Silt (%): 1%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: Yes
Other:
Areas and features protected by erosion control: adjacent backwaters

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5A
CUT: 2
SITE: 5A.08

Page 3 of 3

SITE: 5A.08

SPECIAL CONDITIONS FOR SITE USE: Erosion protection would be essential

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	5	1
Wetlands altered:	0	0
Open water filled:	0	
Upland altered:	4	old dredged material
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Channel Maintenance Plan Costs

Cost figures were not calculated for this site because it is a temporary placement site. Material placed at this site must either be immediately removed to another site or removed to another site after material from several dredging jobs has been placed at the site. Cost for rehandling the material will vary according to demand for material, equipment available for removing the material, how much material must be removed during one rehandling operation, and where the material is ultimately placed.

Due to the number of variables affecting the cost of using this temporary site, calculation of cost estimates would not be meaningful for comparing with placement costs at other sites or with other methods.

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 5A

CUT: 3

SITE: 5A.32

SITE: 5A.32

Page 1 of 3

CUT LOCATION: 731.8 - 732.2 (Head of Betsy Slough)

PLACEMENT SITE LOCATION: RM 732

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 610'
100-year flood: 666.5'
5-year flood: 657'
Flat pool: 650.4'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): No (Flood Fringe)
Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: less than 1/4 mile
Wetland: 0'
Residence: less than 1,000'
Beneficial Use Site: 0
Other: Site is in an industrially developed area between rail line and state highway.

VEGETATION CHARACTER: Bottomland hardwoods, aquatic vegetation

SITE OWNER: City of Fountain City

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: Existing drainage ditch should not be blocked

EXISTING USE OF SITE:

Fish and Wildlife: Fish spawning, furbearers, and waterfowl nesting
Socioeconomic: Potential for industrial development, limited recreation
Adjacent land use: Navigation Channel, state highway

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5A
CUT: 3
SITE: 5A.32

Page 2 of 3

SITE: 5A.32

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 1,366,000
Area at base (acres): 34
Height (feet): 25
Length (feet): 2600
Width (feet): 550
Side slope (ratio): 4:1
Final elevation (feet): 695

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 14/40
Volume dredged per job (cubic yards): 32,900
Beneficial use demand (cubic yards): 40,000+
Beneficial Use by: Fountain City, Milton & Buffalo Townships
Other cuts using sites: 1,2,3 (Buffalo Co. beneficial use assigned to 4.02 and 5.26A)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 98% fine sand
Silt (%): 2%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes (along western edge of placement site)
Revegetation: None
Other: Material should be continuously available for beneficial use removal,
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5A
CUT: 3
SITE: 5A.32

Page 3 of 3

SITE: 5A.32

SPECIAL CONDITIONS FOR SITE USE: Retain Vegetative Buffer Strip

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	5	1
	29	3 and 4
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Head of Betsy Slough

POOL: 5A
CUT: 3
SITE: 5A.32

Frequency: 35%
14/40 yrs
Volume per job: 32,900 cy

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

	TYPES OF DREDGES						
	PIPELINE				MECHANICAL		
		20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$181,000*	\$225,000*	\$258,000*	\$166,000*	\$184,000*	\$205,000*	\$192,000*
Berming Costs (1)	6,000*	8,000*	10,000*	10,000*	10,000*	10,000*	10,000*
Diking Costs	8,000	7,000	6,000	-	-	-	-
Ripraping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	187,000	233,000	268,000	176,000	194,000	215,000	202,000
Average Annual Costs	65,500	81,600	93,800	61,600	67,900	75,300	70,700

*GREAT recommended actions

(1) At 5A.32

DREDGED MATERIAL PLACEMENT SITE

POOL: 5A

EXISTING CONDITIONS DESCRIPTION

CUT: 4

SITE: 5A.25

SITE: 5A.25

Page 1 of 3

CUT LOCATION: 733.4 - 733.9 (Fountain City)

PLACEMENT SITE LOCATION: RM 732.0

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 665'
100-year flood: 666.5'
5-year flood: 657'
Flat pool: 650.4'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0
Residence: less than 1,000'
Beneficial Use Site: 0
Other: Riprap and wing dams are in immediate downstream vicinity

VEGETATION CHARACTER:

bottomland, hardwood and willows

SITE OWNER:

Private (Elmer Gotz)

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Dredged material placement

Adjacent land use: Navigation Channel, Railroad, Private home

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5A

CUT: 4

SITE: 5A.25

Page 2 of 3

SITE: 5A.25

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 220,000
Area at base (acres): 6
Height (feet): 25
Length (feet): 900
Width (feet): 300
Side slope (ratio): 4:1
Final elevation (feet): 630

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 12/40
Volume dredged per job (cubic yards): 34,000
Beneficial use demand (cubic yards): 40,000 (Combined 5A.25 + 5A.32 demand)
Beneficial Use by: Fountain City, Milton, and Buffalo Township (Buff. Co.
Other cuts using sites: 1,2, demand assigned to 4.02 and 5.26A)

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry):
Hydraulic (in slurry):

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: None
Other: None
Areas and features protected by erosion control: Downstream riprap and
wing dams (fishery habitat) coverage

DREDGED MATERIAL PLACEMENT SITE

POOL: 5A

CUT: 4

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

SITE: 5A.25

(Continued from previous page)

Page 3 of 3

SITE: 5A.23

SPECIAL CONDITIONS FOR SITE USE: Material must be removed to retain capacity

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	5*	1
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	1*	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

* Site has already been partially used for material placement

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Fountain City

POOL: 5A
CUT: 4
SITE: 5A.25

Frequency: 30%
12/40 yrs
Volume per job: 34,000 cy

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$493,000*	\$288,000*	\$256,000*	\$138,000*	\$135,000*	\$155,000* \$164,000*
Berming Costs	10,000*(1)	5,000*(2)	6,000*(2)	-	-	-
Diking Costs	8,000	7,000	6,000	-	-	-
Riprapping Costs	80,000	80,000	80,000	80,000	80,000	80,000
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	5,000*	5,000*	5,000*	5,000*	5,000*	5,000*
Total of GREAT recommended Actions	508,000	298,000	267,000	143,000	140,000	160,000 169,000
Average Annual Costs	152,400	89,400	80,100	42,900	42,000	48,000 50,700

*GREAT recommended actions

(1) At 5A.25
(2) At 5A.34

DREDGED MATERIAL PLACEMENT SITE

POOL: 5A

EXISTING CONDITIONS DESCRIPTION

CUT: 4

SITE: 5A.14

SITE: 5A.14

Page 1 of 3

CUT LOCATION: 733.4 - 733.9 (Fountain City)

PLACEMENT SITE LOCATION: 733.7 LB

TYPE OF PLACEMENT SITE: Permanent _____ Temporary X

ELEVATIONS AT SITE:

Site (1980): 660 (approx)
100-year flood: 664.3
5-year flood: 657.1
Flat pool: 651.0

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 50
% Wetland: 50
% Open water:

DISTANCE FROM SITE TO:

Open Water: adjacent
Wetland: adjacent
Residence: mile
Beneficial Use Site: 1 1/2 miles
Other:

VEGETATION CHARACTER: Partially bottomland hardwoods, partially old dredged material

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: furbearers, turtle nesting, fish spawning

Socioeconomic: dredged material placement site

Adjacent land use: main channel wetlands

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5A
CUT: 4
SITE: 5A.14

Page 2 of 3

SITE: 5A.14

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 296,000
Area at base (acres): 7
Height (feet): 25
Length (feet): 1,000
Width (feet): 300
Side slope (ratio): 4:1
Final elevation (feet): 680

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 20/40
Volume dredged per job (cubic yards): 36,200
Beneficial use demand (cubic yards): 0
Beneficial Use by: None
Other cuts using sites: None

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% coarse to fine sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No (possible for rehandling)

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: None
Other: None
Areas and features protected by erosion control: Adjacent backwaters and downstream wing dams.

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5A
CUT: 4
SITE: 5A.14

Page 3 of 3

SITE: 5A.14

SPECIAL CONDITIONS FOR SITE USE: Close coordination with MN DNR for boat access point.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	<u>7</u>	<u>1</u>
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	Unknown	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Channel Maintenance Plan Costs

Cost figures were not calculated for this site because it is a temporary placement site. Material placed at this site must either be immediately removed to another site or removed to another site after material from several dredging jobs has been placed at the site. Cost for rehandling the material will vary according to demand for material, equipment available for removing the material, how much material must be removed during one rehandling operation, and where the material is ultimately placed.

Due to the number of variables affecting the cost of using this temporary site, calculation of cost estimates would not be meaningful for comparing with placement costs at other sites or with other methods.

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 5A
CUT: 5
SITE: 5A.23

SITE: 5A.23 (Bass Camp)

Page 1 of 3

CUT LOCATION: 734.0 - 735.2 (Island 58)

PLACEMENT SITE LOCATION: RM 737.5

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 655'
100-year flood: 667.5'
5-year flood: 659'
Flat pool: 651'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: adjacent
Wetland: 0'
Residence: less than 500'
Beneficial Use Site: 0'
Other:

VEGETATION CHARACTER: Bottomland hardwoods

SITE OWNER: Private (Robert Rolbie's)

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Fish spawning, furbearers, waterfowl nesting

Socioeconomic: Recreation, campground

Adjacent land use: Navigation channel, rail line, and state highway

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5
CUT: 5A
SITE: 5A.23

Page 2 of 3

SITE: 5A.23

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 296,000
Area at base (acres): 7
Height (feet): 25
Length (feet): 1,000
Width (feet): 300
Side slope (ratio): 4:1
Final elevation (feet): 680

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 20/40
Volume dredged per job (cubic yards): 36,200
Beneficial use demand (cubic yards): 64,800+
Beneficial Use by: Bass Camp, Winona County, Minnesota City
Other cuts using sites: 6

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 97% medium sand
Silt (%): 3%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: None
Other: None
Areas and features protected by erosion control: Adjacent backwaters and downstream wing dams.

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5A
CUT: 5
SITE: 5A.23

Page 3 of 3

SITE: 5A.23

SPECIAL CONDITIONS FOR SITE USE: Close coordination with MN DNR for boat access point.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	7	1
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	Unknown	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Island 58
POOL: 5A
CUT: 5
SITE: 5A.23

Frequency: 50 %
20 / 40 yrs
Volume per job: 36,200 cy

	TYPES OF DREDGES					
	PIPELINE 20 inch	16 inch	12 inch	MECHANICAL		
				Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$377,000*	\$433,000*	\$477,000*	\$159,000*	\$155,000*	\$206,000* \$184,000*
Berming Costs	6,000 ¹ *	9,000 ¹ *	11,000 ¹ *	-	-	-
Diking Costs	8,000	7,000	6,000	-	-	-
Riprapping Costs	28,000	28,000	28,000	28,000	28,000	28,000
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	383,000	442,000	488,000	159,000	155,000	206,000 184,000
Average Annual Costs	191,500	221,000	244,000	79,500	77,500	103,000 92,000

*GREAT recommended actions

1. at 5A.23

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 5A
CUT: 5
SITE: 5A.36

SITE: 5A.36

Page 1 of 3

CUT LOCATION: 734.0 - 735.2 (Island 58)

PLACEMENT SITE LOCATION: 738.1 RB

TYPE OF PLACEMENT SITE: Permanent x Temporary _____

ELEVATIONS AT SITE:

Site (1980): 660 (approx)
100-year flood: 667.6
5-year flood: 660.1
Flat pool: 651.0

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): No
Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 50
% Wetland: 50
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: adjacent
Wetland: 0
Residence: adjacent
Beneficial Use Site: 0
Other:

VEGETATION CHARACTER: Partially bottomland hardwoods, partially old dredged material

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Minimal
Socioeconomic: Lock and dam development
Adjacent land use: U.S. highway, main channel, lock and dam

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5A
CUT: 5
SITE: 5A.36

Page 2 of 3

SITE: 5A.36

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards):	81,000
Area at base (acres):	2
Height (feet):	25
Length (feet):	350
Width (feet):	250
Side slope (ratio):	-
Final elevation (feet):	685

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 20/40
Volume dredged per job (cubic yards): 36,200
Beneficial use demand (cubic yards): 64,800
Beneficial Use by: Winona Co., Minnesota City.
Other cuts using sites: 0

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 97% medium sand
Silt (%): 3%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No (possibly for rehandling)

EROSION CONTROL NEEDED:

Riprap: possibly
Revegetation: No
Other:
Areas and features protected by erosion control: Downstream wing dams
and deep pools

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5A

CUT: 5

SITE: 5A.36

Page 3 of 3

SITE: 5A.36

SPECIAL CONDITIONS FOR SITE USE:

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	1	
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	1	old dredged material
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐

Historical/Archeological sites were not found: ☐

Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Island 58
POOL: 5A
CUT: 5
SITE: 5A.36

Frequency: 50%
20/40 yrs
Volume per job: 36,200 cy

PIPELINE	TYPES OF DREDGES			
	16 inch	12 inch	MECHANICAL	
20 inch			Backhoe 350 H.P.	Clamshell 700 H.P.

Basic Dredging Operation	\$ 358,000*	\$ 400,000 *	\$ 393,000*	\$ 157,000 *	\$ 155,000	\$ 202,000*	\$ 194,000*
Berming Costs	5,000 ¹ *	7,000 ¹ *	9,000 ¹ *	-	-	-	-
Diking Costs	7,000	6,000	5,000	-	-	-	-
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	363,000	407,000	402,000	157,000	155,000	202,000	194,000
Average Annual Costs	181,500	203,500	201,000	78,500	77,500	101,000	97,000

*GREAT recommended actions

1, at 5A.14

DREDGED MATERIAL PLACEMENT SITE

POOL: 5A

EXISTING CONDITIONS DESCRIPTION

CUT: 5

SITE: 5A.14

SITE: 5A.14

Page 1 of 3

CUT LOCATION: 734.0 - 735.2 (Island 58)

PLACEMENT SITE LOCATION: 733.7 LB

TYPE OF PLACEMENT SITE: Permanent _____ Temporary X

ELEVATIONS AT SITE:

Site (1980): 660 (approx)
100-year flood: 664.3
5-year flood: 657.1
Flat pool: 651.0

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: ?

SITE CHARACTER:

% Upland: 50
% Wetland: 50
% Open water:

DISTANCE FROM SITE TO:

Open Water: adjacent
Wetland: adjacent
Residence: mile
Beneficial Use Site: 1 1/2 miles
Other:

VEGETATION CHARACTER: Partially bottomland hardwoods, partially old dredged material

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: None
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Furbearers, turtle nesting, fish spawning
Socioeconomic: Dredge material placement site
Adjacent land use: Main channel, wetlands

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5A
CUT: 5
SITE: 5A.14

Page 2 of 3

SITE: 5A.14

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 775,000
Area at base (acres): 32
Height (feet): 15
Length (feet): 2100
Width (feet): 650
Side slope (ratio): -
Final elevation (feet): 660 (Material to be removed periodically)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 20/40
Volume dredged per job (cubic yards): 36,200
Beneficial use demand (cubic yards): 0
Beneficial Use by: N/A
Other cuts using sites: 4,5

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 97% medium sand
Silt (%): 3%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: No
Revegetation: No
Other: Material to be removed from site before next seasonal high water.
Areas and features protected by erosion control: Adjacent backwaters and
downstream wing dams.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5A
CUT: 5
SITE: 5A.14

Page 3 of 3

SITE: 5A.14

SPECIAL CONDITIONS FOR SITE USE: Material must be removed from site before next seasonal high water.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	approx 16	1
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	16	old dredged material
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Channel Maintenance Plan Costs

Cost figures were not calculated for this site because it is a temporary placement site. Material placed at this site must either be immediately removed to another site or removed to another site after material from several dredging jobs has been placed at the site. Cost for rehandling the material will vary according to demand for material, equipment available for removing the material, how much material must be removed during one rehandling operation, and where the material is ultimately placed.

Due to the number of variables affecting the cost of using this temporary site, calculation of cost estimates would not be meaningful for comparing with placement costs at other sites or with other methods.

DREDGED MATERIAL PLACEMENT SITE

POOL: 5A

CUT: 6

SITE: 5A. 23

EXISTING CONDITIONS DESCRIPTION

Page 1 of 3

SITE: 5A. 23 (Bass Camp)

CUT LOCATION: 737.7 - 738.1 (Lower Approach L/D 5)

PLACEMENT SITE LOCATION: RM 737.5

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 655'
100-year flood: 667.5'
5-year flood: 659'
Flat pool: 651'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: Yes

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: adjacent
Wetland: 0
Residence: less than 500'
Beneficial Use Site: 0
Other:

VEGETATION CHARACTER: Bottomland Hardwoods

SITE OWNER: Private (Robert Rolbie's)

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Fish spawning, furbearer, waterfowl nesting

Socioeconomic: Recreation, campground

Adjacent land use: Navigation channel, rail line, and state highway

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 5A
CUT: 6
SITE: 5A. 23

Page 2 of 3

SITE: 5A. 23

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 296,000
Area at base (acres): 7
Height (feet): 25
Length (feet): 1,000
Width (feet): 300
Side slope (ratio): 4:1
Final elevation (feet): 680

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 2/40
Volume dredged per job (cubic yards): 24,800
Beneficial use demand (cubic yards): 64,800+
Beneficial Use by: Bass Camp, Winona County, Minnesota City
Other cuts using sites: 5

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 98% coarse to fine sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: None
Other: None
Areas and features protected by erosion control: Adjacent backwaters and
downstream wing dams

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 5A
CUT: 6
SITE: 5A.23

Page 3 of 3

SITE: 5A.23

SPECIAL CONDITIONS FOR SITE USE: Close coordination with MN DNR for boat access point

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	7	1
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

Lower Approach L/D 5
POOL: 5A
CUT: 6
SITE: 5A.23

Frequency: 5%
2/40 yrs
Volume per job: 24,800 cy

TYPES OF DREDGES

PIPELINE	MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.
				700 H.P.
				Clamshell 700 H.P.

Basic Dredging Operation	\$ 114,000*	\$ 125,000*	\$ 123,000*	\$ 86,000*	\$ 97,000*	\$ 114,000*	\$ 108,000*
Berming Costs	4,000*	5,000*	6,000*	-	-	-	-
Diking Costs	7,000	6,000	5,000	-	-	-	-
Riprapping Costs	28,000	28,000	28,000	28,000	28,000	28,000	28,000
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	118,000	130,000	129,000	86,000	97,000	114,000	108,000
Average Annual Costs	5,900	6,500	6,500	4,300	4,900	5,700	5,400

*GREAT recommended actions

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5A Cut 1

Alternative Plan	Selected	Selected	NED, MPFW/OG	EQ	RFFP
Placement Site No.	5A.32	5A.25	5A.04	5A.35	5A.19
Site Capacity (cy)	1,366,000	220,000	418,000	714,000	75,000
Site Acreage	34	6	8	52	3
Site Height (ft)	25	25	30	15	35
Potential Beneficial use removal (cy)	40,000	40,000	-	714,000	40,000
Conditions ¹ favoring use of site	22 4 5 30 11(?) 32 33 35* 16	21 22 4 25 27 11 32 33 35*	1 6 7 8 9 11 32 33 16.	1 3 4 7 30. 32. 33. 15. 16.	21 2 23. 4. 5. 27. 10. 11 12 33 35 16
Conditions ¹ adverse to use of site	41 63 66 47 68 49 74	43 66 68 49 70 54 76	62 43 64. 65. 50. 54. 75.	42. 65. 46 48. 49 71. 54	66 68 69 54
	*for small amount	*for small amount			
¹ Code numbers in columns represent conditions listed on pages _____.					
		165			

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5A Cut 2

Alternative Plan	Selected	Selected	NED, MPFW/OG	EQ	RFFP
Placement Site No.	5A.32	5.25	5A.08 ²	5A.35	5A.19
Site Capacity (cy)	1,366,000	220,000	418,000	714,000	75,000
Site Acreage	34	6	15	52	3
Site Height (ft)	25	25	20	15	35
Potential Beneficial use removal (cy)	Total of	40,000	-	714,000	40,000
Conditions ¹ favoring use of site	22 4 5 46 30 11 32 33 35 16	21 22 4 25 46 27 11 32 33 35*	1 6. 7. 8. 9. 11 32. 33. 16	1 3 4 7 30. 32. 33. 15. 16.	21 2 23. 4. 5. 27. 10. 11 12 33 35 16
Conditions ¹ adverse to use of site	41 63 47 48 49 74	43 48 49 70 54 76	62. 43 64 65 70 54 75	42. 65. 46 48. 49 71. 54	66 68 69 54
	*for small amount	*for small amount	2.Temporary Site		
¹ Code numbers in columns represent conditions listed on pages _____.					
		166			

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5A Cut 3

Alternative Plan	Selected MPFW/OG	NEA, EQ RFFP	EQ, RFFP		
Placement Site No.	5A.32	5A.25	5A.33 / 5A.27		
Site Capacity (cy)	1,366,000	220,000	181,000		
Site Acreage	34	6	8		
Site Height (ft)	25	25	15		
Potential Beneficial use removal (cy)	Total of	40,000	40,000		
Conditions ¹ favoring use of site	22. 4. 5. 6. 8. 29. 30. 11. 32. 33. 35.* 16	21 22 4. 25. 6. 27. 8 29. 11. 32 33. 35*	22 23. 4. 5. 26. 28. 29. 30. 11 32. 33. 35.*		
Conditions ¹ adverse to use of site	41 63 47 74	43 70 54 76	41 47 54. 76.		
	*for small amount	*for small amount	*for small amount		

¹ Code numbers in columns represent
conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5A Cut 4

Alternative Plan	Selected	NED, MPFW/OG	EQ, RFFP	EQ	
Placement Site No.	5A.25	5A.34	5A.20	5A33/5A.27	
Site Capacity (cy)	243,000	438,000	720,000	181,000	
Site Acreage	6	18	18	8	
Site Height (ft)	25	15	25	15	
Potential Beneficial use removal (cy)	40,000 w/5A.32	438,000	40,000	40,000	
Conditions ¹ favoring use of site	21 22 4 25 27 29 11. 32. 33. 35*	21 4 6. 7 8 9. 11 32 33 15 16	21 2 4 5 10 11 12 33 35* 16	22. 23. 4. 5. 30. 11 32. 33. 35.*	
Conditions ¹ adverse to use of site	43 46. 48. 70. 54 56. *for small amount	62. 43. 65. 50. 54. *for small amount	43 66 47 68 69 54 *for small amount	41 46 47 48 49 54 76 *for small amount	
<p>1 Code numbers in columns represent conditions listed on pages ____.</p>					

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5A Cut 5

Alternative Plan	Selected	Selected	NED, MPFW/OG	EQ, RFFP	EQ, RFFP
Placement Site No.	5A.23	5A.36	5A.14 ²	5A.27/5A.33	5A.20
Site Capacity (cy)	296,000	81,000	775,000	181,000	720,000
Site Acreage	7	2	32	8	18
Site Height (ft)	25	25	15	15	25
Potential Beneficial use removal (cy)	65,000	65,000	-	40,000	40,000
Conditions ¹ favoring use of site	1 4 5 27 30 11 12 33 15*	22 4 5 7 30 11 12 33 35*	1 6. 7. 8. 11 32 33 16	22 23 4 5 30 11 32 33 35*	21 2 4 5 10 11 12 33 35* 16
Conditions ¹ adverse to use of site	42 43 66 48 49 54 76	41 43 66 48 49 54 76	62 43 64 65 70 54 75	41 66 68 49 54 76	43 66 47 68 69 54
	*partial	*for small amount	2 Temporary Site	*for small amount	*for small amount

¹ Code numbers in columns represent conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5A Cut 5 (Cont)

Alternative Plan	EQ, RPPP				
Placement Site No.	5A.21				
Site Capacity (cy)	590,000				
Site Acreage	12				
Site Height (ft)	30				
Potential Beneficial use removal (cy)	40,000				
Conditions ¹ favoring use of site	21 2 4 5 10 11 12 33 35* 16				
Conditions ¹ adverse to use of site	43 66 47 68 69 54				
*for small amount					
1 Code numbers in columns represent conditions listed on pages ____.					

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 5A Cut 6

Alternative Plan	Selected, NED MPFW/OG	EQ, RFFP	EQ, RFFP	EQ, RFFP	
Placement Site No.	5A.23	5A.27/5A.33	5A.20	5A.21	
Site Capacity (cy)	296,000	181,000	720,000	590,000	
Site Acreage	7	8	18	12	
Site Height (ft)	25	15	25	30	
Potential Beneficial use removal (cy)	65,000	40,000	40,000	40,000	
Conditions ¹ favoring use of site	1 4 5 26. 27 8 9 30 11 32 33 15* 16	22 23 4 5 10 11 32 33 35*	21 2 4 5 10 11 12 33 35* 16	21 2 4 5 10 11 12 33 35* 16	
Conditions ¹ adverse to use of site	42 43 54 *partial	41 66 68 49 54 76 *for small amount	43 66 47 68 69 54 *for small amount	43 66 47 68 69 54 *for small amount	
<p>1 Code numbers in columns represent conditions listed on pages ____.</p>					

Key to Conditions Used in Site Comparisons

1. Recreation enhancement
 2. Remove from floodplain
 3. Fish and wildlife enhancement
 4. Beneficial use identified
 5. Existing road access
 6. Adjacent to cut
 7. No land acquisition required
 8. Provides flexibility of equipment
 9. Least cost to dredge
 10. No erosion potential
 11. No special construction required
 12. No diking or berming
 13. No water quality concerns
 14. Aesthetic enhancement
 15. Beneficial use on the site
 16. Sufficient capacity on the site
-
21. No adverse impacts on recreation use
 22. Potential for removal from floodplain
 23. No adverse fish and wildlife impacts
 24. Potential for identifying a beneficial user
 25. Road access can be constructed
 26. Within $\frac{1}{2}$ mile of cut (easy reach of cutterhead dredges)
 27. No apparent problem in acquiring land or easement
 28. Slight limitation on equipment choice
 29. Less costly than dredging to most other sites
 30. Some erosion potential
 31. (Unused)
 32. Berming required
 33. No water quality concern expected
 34. (Unused)
 35. Know of area where material can be put to beneficial use
 36. Sufficient capacity site but less impact if beneficial use demand is developed

PREVIOUS PAGE BLANK--NOT FILLED

41. Some adverse impacts on recreation use
42. In floodplain - no effect on flood flows
43. Some adverse impacts on fish and wildlife
44. No suspected beneficial user can be identified
45. Poor access to the site
46. Within 2 miles of cut (barely within reach of hydraulic dredges)
47. Land or easement acquisition required
48. Equipment choice limited to just a few options
49. More costly than dredging to most of the other sites
50. Severe erosion potential
51. (Unused)
52. Diking required
53. Suspected water quality concerns
54. Some aesthetic problems
55. Potential market for beneficial use suspected but not identified
56. Sufficient capacity on site with removal by identified users

61. Severe adverse impacts on recreation use
62. Placement would cause suspected constriction on flood flows
63. Severe adverse impacts on fish and wildlife
64. No potential for identifying beneficial user
65. No access to the site
66. Beyond 2 miles from cut (cannot be reached directly by cutterhead dredges)
67. Land or easement acquisition required but does not seem likely
68. Severe restrictions on choice of equipment
69. Most costly to dredge
70. Severe erosion potential with severe consequences if failure occurs
71. Special construction required to use the site
72. Berming or diking required with severe consequences if failure occurs
73. Known water quality concerns
74. Adverse aesthetic impacts
75. No potential market for beneficial use
76. Sufficient capacity on site only if potential beneficial use, not now identified, develops

LEGEND

RECOMMENDED CHANNEL MAINTENANCE PLAN

5



4 09

ALTERNATIVE MATERIAL PLACEMENT PLANS



Alternative placement site

4 09 Site number

POOL 5A

DREDGE CUT	ALTERNATIVE PLACEMENT PLANS			
	MPFW/OG	NED	EQ	RFFP
1	5A.04	5A.04	5A.35	5A.19
2	5A.08	5A.08	5A.35	5A.19
3	5A.32	5A.25	5A.25/5A.27/5A.33	5A.25/5A.27/5A.33
4	5A.34	5A.34	5A.20/5A.27/5A.33	5A.20
5	5A.14	5A.14	5A.27/5A.33/ 5A.20/5A.21	5A.27/5A.33/ 5A.20/5A.21
6	5A.23	5A.23	5A.27/5A.33/ 5A.20/5A.21	5A.27/5A.33/ 5A.20/5A.21

M = Most probable future without GREAT

N = National economic development

E = Environmental quality

R = Removal from floodplain

SCALE: 1" = 4,000'

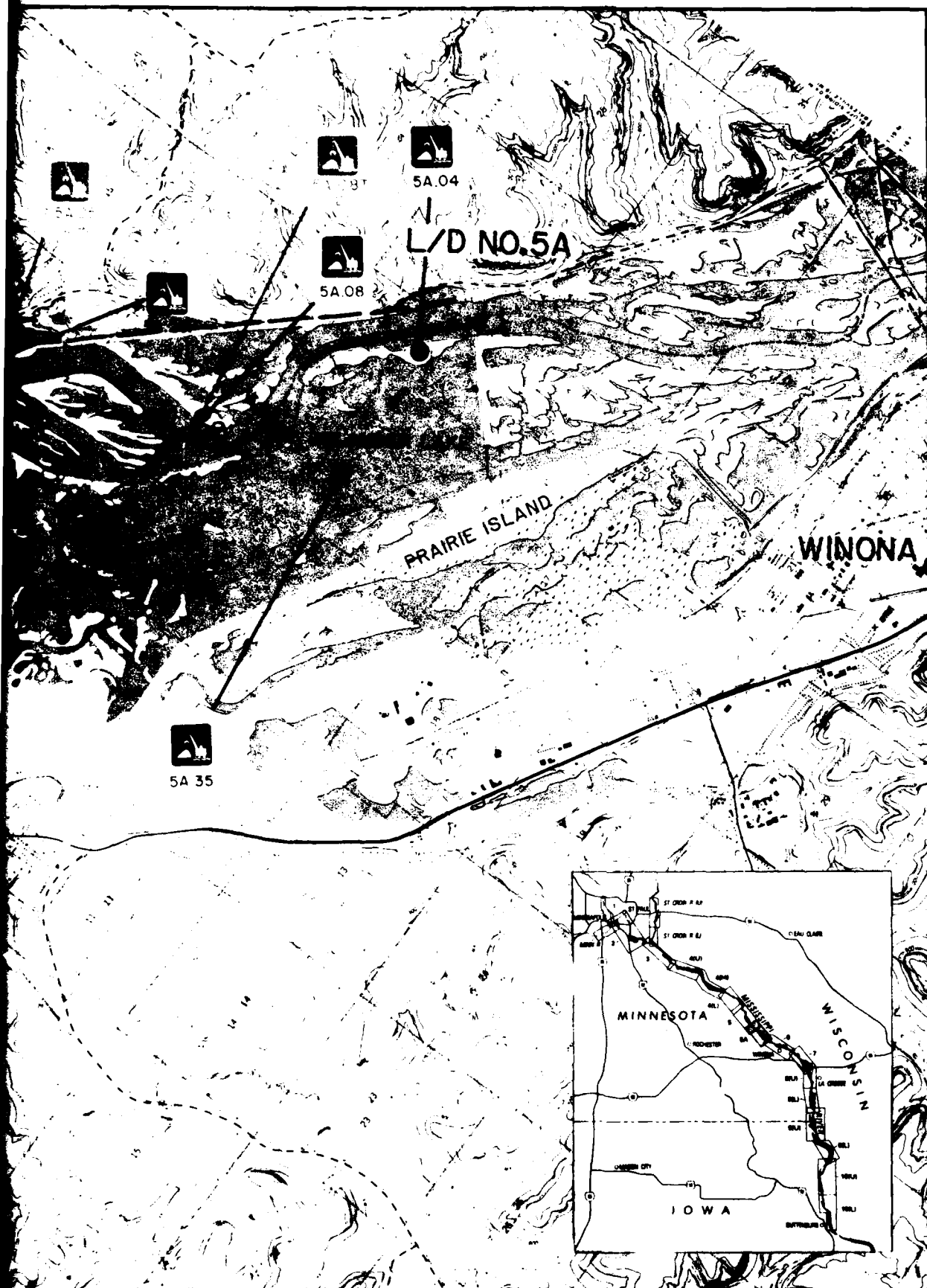
CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM 1929



----- FLOODWAY DESIGNATED BY LOCAL ORDINANCE



GREAT RIVER
U



GREAT RIVER ENVIRONMENTAL ACTION TEAM
UPPER MISSISSIPPI RIVER
(POOL 5A-MILE 728 TO MILE 742)



POOL 6

CHANNEL MAINTENANCE PLAN SUMMARY

POOL 6

Dredge Cut	MPFMOG CY @ 1985-0225	Selected Site	NED Site	EQ Site	RPYP Site	MPFMOG Site	MPFMOG CY @ 1985-2025	Temporary Site
1. Homer Point	272,500	6.17/6.11	6.11	6.11	6.17	6.10	299,000	-----
2. Gravel Point	80,000	6.17	6.14	6.19/6.20*	6.17	6.14	87,500	-----
3. Below Winona Railroad Bridge	434,000	6.17	6.17	6.19/6.20	6.17	6.16/6.17	469,500	-----
4. Above Winona Railroad Bridge	171,000	6.14/6.20/6.17	6.16	6.19/6.20	6.19/6.20	6.18	187,000	-----
5. Island 71	97,500	6.27	6.27	6.27	6.20	6.27	105,000	-----
6. Lower Approach to L/D 5A	129,500	6.27	6.27	6.27	6.20	6.27	142,500	-----
	<u>1,184,500</u>						<u>1,290,500</u>	

SELECTED PLAN SUMMARY

Total Volume Dredged (cy) -	1,184,500	No. of sites with:	
Beneficial Use (cy) Potential from Selected Sites -	2,920,000	Recreation Enhancement	- 2
Total Area (acres) -	38	Cultural Resources Impacts	- 0
		Wetlands Affected:	
		Types 1, 2 (acres)	- 1
		Types 3, 4, 5 (acres)	- 21

Table 2
Pool 6 Dredging Volumes

Item	Cut 1		Cut 2		Cut 3	
	With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT
Cut Name	Homer		Gravel Point		Below Winona RR Bridge	
1955 - 1974 average annual dredging volume	10,600	10,600	3,100	3,100	14,600	14,600
Bend width changes (percent)	-	-	-	-	-	-
Adjusted average annual volume	10,600	10,600	3,100	3,100	14,600	14,600
Changes for 1986 - 2000 (percent)	-34	-19	-34	-19	-24(1)	-9(1)
Adjusted average annual volume	7,000	8,600	2,000	2,500	11,100	13,300
Total volume dredged, 1986 - 2000	105,000	129,000	30,000	37,500	166,500	199,500
Change for 2001 - 2025 (percent)	-37	-36	-37	-36	-27(1)	-26(1)
Adjusted average annual volume	6,700	6,800	2,000	2,000	10,700	10,800
Total volume dredged, 2001 - 2025	167,500	170,000	50,000	50,000	267,500	270,000
Total volume dredged, 1986 - 2025	272,500	299,000	80,000	87,500	434,000	469,500
Frequency of dredging (percent)	30	30	15	15	30	30
Expected number of dredging jobs (1986 - 2025)	12	12	6	6	12	12
Average dredging volume per job	22,700	24,900	13,300	14,600	36,200	39,100

(1) Cut in approach to rigid structure.

Note: All volumes in Cubic Yards

Table 2- (cont)

Pool 6 Dredging Volumes

Item	Cut 4		Cut 5		Cut 6	
	With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT
Cut Name	Above Winona RR Bridge		Island 71		Lower Approach L/D 5A	
1955 - 1974 average annual dredging volume	5,800	5,800	3,300	3,300	4,400	4,400
Bend width changes (percent)	-	-	-	-	-	-
Adjusted average annual volume	5,800	5,800	3,300	3,300	4,400	4,400
Changes for 1986 - 2000 (percent) ⁽¹⁾	-24	-9	-24	-9	-24	-9
Adjusted average annual volume	4,400	5,300	2,500	3,000	3,300	4,000
Total volume dredged, 1986 - 2000	66,000	79,500	37,500	45,000	49,500	60,000
Change for 2001 - 2025 (percent) ⁽¹⁾	-27	-26	-27	-26	-27	-26
Adjusted average annual volume	4,200	4,300	2,400	2,400	3,200	3,300
Total volume dredged, 2001 - 2025	105,000	107,500	60,000	60,000	80,000	82,500
Total volume dredged, 1986 - 2025	171,000	187,000	97,500	105,000	129,500	142,500
Frequency of dredging (percent)	20	20	30	30	40	40
Expected number of dredging jobs (1986 - 2025)	8	8	12	12	16	16
Average dredging volume per job	21,400	23,400	8,100	8,800	8,100	8,900

Note: All volumes in Cubic Yards

(1) All cuts in approach to rigid structure

DREDGED MATERIAL PLACEMENT SITE

PJOL: 6
CUT: 1
SITE: 6.17

EXISTING CONDITIONS DESCRIPTION

SITE: 6.17

Page 1 of 3

CUT LOCATION: 720.0 - 721.0 (Homer Point)

PLACEMENT SITE LOCATION: RM 723.5

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 655
100-year flood: 658.5
5-year flood: 652.5
Flat pool: 645.1

FLOOD STAGE FACTORS:

Site within floodplain: No*
Site within floodway (effective flow area): No
Site below ordinary high water mark: No
* With completion of Winona Flood Control Project now under construction.

SITE CHARACTER:

% Upland: 0
% Wetland: 100 (Type 3 & 4)
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 3,000'
Wetland: 0'
Residence: Less than 1,000'
Beneficial Use Site: 0'
Other: None

VEGETATION CHARACTER: Open meadow, lowland woods, flood levee (dike) present on upstream side, previously spoiled.

SITE OWNER: Winona Port Authority

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Deer, rabbits, pheasants, raccoons and songbirds frequent area for nesting and feeding. Also used by waterfowl.
Socioeconomic: Industrial development and city airport.

Adjacent land use: Milwaukee Railroad, 1/4 mile from residential area.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 6
CUT: 1
SITE: 6.17

Page 2 of 3

SITE: 6.17

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 875,000
Area at base (acres): 21
Height (feet): 25
Length (feet): 1,300
Width (feet): 700
Side slope (ratio): 4:1
Final elevation (feet): 680

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 12/40
Volume dredged per job (cubic yards): 22,700
Beneficial use demand (cubic yards): 2,920,000
Beneficial Use by: Winona Port Authority, Winona Co, City & Township
Other cuts using sites: 1,2,3,4 Goodview

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Enclosed by roads (E & W side) and dike on upstream end.
Areas and features protected by erosion control: Site is isolated from
floodflows by railroad tressle and dike, erosion would spread spoil out
covering downstream wetlands and filling backside ponds (used by
waterfowl and furbearers).

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 6
CUT: 1
SITE: 6.17

Page 3 of 3

SITE: 6.17

SPECIAL CONDITIONS FOR SITE USE:

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	21	3 & 4
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	This site is to be filled for development of industrial park.	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

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CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

HOMER
POOL: 6
CUT: 1
SITE: 6.17

Frequency: 30 %
/40 yrs
Volume per job: 22,700 cy

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
(1) Basic Dredging Operation	\$ 266,000*	\$ 277,000*	\$ 264,000*	\$ 189,000*	\$ 189,000*	\$ 202,000*
Berming Costs	3,000*	4,000*	5,000*	5,000*	5,000*	5,000*
Diking Costs	7,000	6,000	5,000	5,000	5,000	5,000
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	269,000	281,000	269,000	194,000	194,000	207,000
Average Annual Costs	80,700	84,300	80,700	58,200	58,200	62,100

*GREAT recommended actions

Before dredging investigate any possible cost savings of using small crane or back hoe to unload barges and trucks to move the material instead.

(1) Material transported inland with 12-inch hydraulic dredge.

DREDGED MATERIAL PLACEMENT SITE

POOL: 6

EXISTING CONDITIONS DESCRIPTION

CUT: 1

SITE: 6.11

SITE: 6.11

Page 1 of 3

CUT LOCATION: 720.0 - 721.0 (Homer Point)

PLACEMENT SITE LOCATION: RM 720.5

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 649
100-year flood: 657.25
5-year flood: 651
Flat pool: 644.7

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: Yes

SITE CHARACTER:

% Upland: 90
% Wetland: 10
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0'
Residence: 200'
Beneficial Use Site: 0'
Other: None

VEGETATION CHARACTER: Primarily bottomland hardwood with equiv. to 2 acres existing spoil, 1 acre Type 1 wetland.

SITE OWNER: Private

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Turtle nesting area, intermittent fish habitat, furbearer, songbird, waterfowl and shorebirds use present.
Socioeconomic: Some boating use/recreational (primitive beach, camping) enhancement potential. Adjacent land use
Adjacent land use: State highway, railroad.

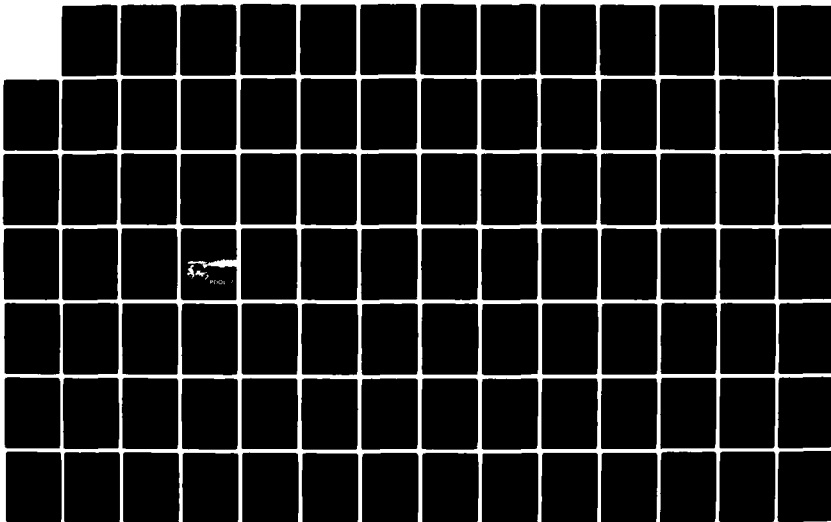
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GREAT I STUDY OF THE UPPER MISSISSIPPI RIVER TECHNICAL
APPENDICES VOLUME 8. (U) GREAT RIVER ENVIRONMENTAL
ACTION TEAM SEP 80

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DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 6
CUT: 1
SITE: 6.11

Page 2 of 3

SITE: 6.11

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 200,000
Area at base (acres): 11
Height (feet): 15
Length (feet): 950
Width (feet): 500
Side slope (ratio): 4:1
Final elevation (feet): 664

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 12/40
Volume dredged per job (cubic yards): 22,700
Beneficial use demand (cubic yards): 920,000
Beneficial Use by: Winona Co., City & Township, Goodview
Other cuts using sites: None
Site 6.11 is a secondary site, to be used only if insufficient capacity at 6.17

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 92% coarse to medium sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: None
Other: None

Areas and features protected by erosion control: Coverage of down stream wing dams and riprap, small backwater slough immediately downstream.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 6
CUT: 1
SITE: 6.11

Page 3 of 3

SITE: 6.11

SPECIAL CONDITIONS FOR SITE USE: Material must be removed from site before next seasonal high water.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	1	1
Wetlands altered:	None	
Open water filled:	None	
Upland altered: 2 existing spoil & 8 bottomland hardwood/access road must be		
Endangered Species habitat lost:	None	designed.
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

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FOR
CHANNEL
MAINTENANCE
BY
THE
ARMY
CORPS
OF
ENGINEERS

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

HOMER
POOL: 6
CUT: 1
SITE: 6.11

Frequency: 30 %
/40 yrs
Volume per job: 22,700 cy

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$ 107,000*	\$ 120,000*	\$ 109,000*	\$ 81,000*	\$ 90,000*	\$ 104,000* 99,000*
Berming Costs	3,000	4,000	5,000	-	-	-
Diking Costs	7,000	6,000	5,000	-	-	-
Riprapping Costs	90,000	90,000	90,000	90,000	90,000	90,000
Seasonal Removal (1)	50,000*	50,000*	50,000*	50,000*	50,000*	50,000*
Special Construction	0	0	0	0	0	0
Land Acquisition	9,000	9,000	9,000	9,000	9,000	9,000
Total of GREAT recommended Actions	157,000	170,000	159,000	131,000	140,000	154,000 149,000
Average Annual Costs	47,100	51,000	47,700	39,300	42,000	46,200 44,700

*GREAT recommended actions

(1) Moved 5 miles by Beneficial User

DREDGED MATERIAL PLACEMENT SITE

POOL: 6
CUT: 2
SITE: 6.17

EXISTING CONDITIONS DESCRIPTION

SITE: 6.17

Page 1 of 3

CUT LOCATION: 721.9 722.3 (Gravel Point)

PLACEMENT SITE LOCATION: RM 723.5

TYPE OF PLACEMENT SITE: Permanent X Temporary

ELEVATIONS AT SITE:

Site (1980): 655
100-year flood: 658.5
5-year flood: 652.5
Flat pool: 645.1

FLOOD STAGE FACTORS:

Site within floodplain: No*
Site within floodway (effective flow area): No
Site below ordinary high water mark: No
*With Completion of Winona Flood Control Project now under construction.

SITE CHARACTER:

% Upland: 0
% Wetland: 100 (Type 3 & 4)
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 3,000'
Wetland: 0'
Residence: Less than 1,000'
Beneficial Use Site: 0'
Other: None

VEGETATION CHARACTER: Open meadow, lowland woods, flood levee (dike) present on upstream side, previously spoiled.

SITE OWNER: Winona Port Authority

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Deer, rabbits, pheasants, raccoons and songbirds frequent area for nesting and feeding. Also used by waterfowl.
Socioeconomic: Industrial development and city airport.

Adjacent land use: Milwaukee Railroad, 1/4 mile from residential area.

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 6
CUT: 2
SITE: 6.17

Page 2 of 3

SITE: 6.17

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 875,000
Area at base (acres): 21
Height (feet): 25
Length (feet): 1,300
Width (feet): 700
Side slope (ratio): 4:1
Final elevation (feet): 680

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 6/40
Volume dredged per job (cubic yards): 13,300
Beneficial use demand (cubic yards): 2,920,000
Beneficial Use by: Winona Port Authority, Winona Co., City, & Township,
Other cuts using sites: 1,3,4 Goodview

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% coarse to fine sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Enclosed by roads (E & W side) and dike on upstream end.
Areas and features protected by erosion control: Site is isolated from
floodflows by railroad tressle and dike, erosion would spread spoil out
covering downstream wetlands and filling backside ponds (used by
waterfowl and furbearers).

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 6
CUT: 2
SITE: 6.17

Page 3 of 3

SITE: 6.17

SPECIAL CONDITIONS FOR SITE USE:

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	21	3 & 4
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	This site is to be filled for development of industrial park.	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE BYVA COS12

GRAVEL POINT
POOL: 6
CUT: 2
SITE: 6.17

Frequency: 15 %
 /40 yrs
 Volume per job: 13,300 cy

CHANNEL MAINTENANCE PLAN COSTS PER DREDGING JOB

PIPELINE	TYPES OF DREDGES			
	16 inch	12 inch	Backhoe 350 H.P.	MECHANICAL 700 H.P. 350 H.P. 700 H.P. Clamshell

Basic Dredging Operation (1)	\$ 337,000*	\$ 383,000*	\$ 375,000*	\$ 94,000*	\$ 105,000*	\$ 99,000*	\$ 109,000*
Berming Costs	7,000*	7,000*	9,000*	9,000*	9,000*	9,000*	9,000*
Diking Costs	9,000	7,000	4,000	4,000	4,000	4,000	4,000
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0

Total of GREAT recommended Actions	344,000	390,000	384,000	103,000	114,000	108,000	118,000
Average Annual Costs	51,600	58,500	57,600	15,450	17,100	16,200	17,700

*GREAT recommended actions

Before dredging investigate any possible cost savings of using small crane or back hoe to unload barges and trucks to move the material inland

(1) Barged Material transported inland with 12-inch hydraulic dredge.

DREDGED MATERIAL PLACEMENT SITE

POOL: 6
CUT: 3
SITE: 6.17

EXISTING CONDITIONS DESCRIPTION

SITE: 6.17

Page 1 of 3

CUT LOCATION: 722.5 - 723.8 (Below Winona Railroad Bridge)

PLACEMENT SITE LOCATION: RM 723.5

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 655
100-year flood: 658.5
5-year flood: 652.5
Flat pool: 645.1

FLOOD STAGE FACTORS:

Site within floodplain: No*
Site within floodway (effective flow area): No
Site below ordinary high water mark: No
*With completion of Winona Flood Control Project now under construction.

SITE CHARACTER:

% Upland: 0
% Wetland: 100 (Type 3 & 4)
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 3,000'
Wetland: 0'
Residence: Less than 1,000'
Beneficial Use Site: 0'
Other: None

VEGETATION CHARACTER: Open meadow, lowland woods, flood levee (dike) present on upstream side, previously spoiled.

SITE OWNER: Winona Port Authority

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Deer, rabbits, pheasants, raccoons and songbirds frequent area for nesting and feeding. Also used by waterfowl.
Socioeconomic: Industrial development and city airport.

Adjacent land use: Milwaukee Railroad, 1/4 mile from residential area.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 6
CUT: 3
SITE: 6.17

Page 2 of 3

SITE: 6.17

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 875,000
Area at base (acres): 21
Height (feet): 25
Length (feet): 1,300
Width (feet): 700
Side slope (ratio): 4:1
Final elevation (feet): 680

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 12/40
Volume dredged per job (cubic yards): 36,200
Beneficial use demand (cubic yards): 2,920,000
Beneficial Use by: Winona Port Authority, Winona Co., City & Township,
Other cuts using sites: 1,2,4 Goodview

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% coarse to fine sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Enclosed by roads (E & W side) and dike on upstream end.
Areas and features protected by erosion control: Site is isolated from
floodflows by railroad tressle and dike, erosion would spread spoil out
covering downstream wetlands and filling backside ponds (used by waterfowl
and furbearers).

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 6
CUT: 3
SITE: 6.17

Page 3 of 3

SITE: 6.17

SPECIAL CONDITIONS FOR SITE USE:

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	21	3 & 4
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other: This site is to be filled for development of industrial park.		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

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BER DREDGING JOB

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CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

BELOW LOWER WINONA RR
POOL: 6
CUT: 3
SITE: 6.17

Frequency: 30 %
/40 yrs
Volume per job: 36,200 cy

	TYPES OF DREDGES					
	PIPELINE	MECHANICAL				Clamshell
		20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.
(1) Basic Dredging Operation	\$ 246,000*	\$ 191,000*	\$ 184,000*	\$ 292,000*	\$ 284,000*	\$ 306,000*
Berming Costs	5,000*	7,000*	8,000*	8,000*	8,000*	8,000*
Diking Costs	8,000	7,000	6,000	6,000	6,000	6,000
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction						
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	251,000	198,000	192,000	300,000	292,000	314,000
Average Annual Costs	75,300	59,400	57,600	90,000	87,600	94,200

*GREAT recommended actions

Before dredging investigate any possible cost savings of using small crane or back hoe to unload barges and trucks to move the material inland.

(1) Barged material transported inland with 12-inch hydraulic dredge.

DREDGED MATERIAL PLACEMENT SITE

POOL: 6
CUT: 4
SITE: 6.19

EXISTING CONDITIONS DESCRIPTION

SITE: 6.19

Page 1 of 3

CUT LOCATION: 723.9 - 724.2 (Above Winona Railroad Bridge)

PLACEMENT SITE LOCATION: RM 724.5

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 655
100-year flood: 659.5'
5-year flood: 653'
Flat pool: 645.3'

FLOOD STAGE FACTORS:

Site within floodplain: No*
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

*With completion of Winona Flood Control Project now under construction.

SITE CHARACTER:

% Upland: 100
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Less than 200'
Wetland: None in immediate area
Residence: Less than 200'
Beneficial Use Site: 0'
Other: Area behind levee in City of Winona.

VEGETATION CHARACTER: Site is a previously used disposal area.

SITE OWNER: City of Winona

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: Area is behind a levee.

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Industrial and commercial enterprise.

Adjacent land use: Navigation channel, residential.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 6
CUT: 4
SITE: 6.19

Page 2 of 3

SITE: 6.19

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 60,000
Area at base (acres): 2.5
Height (feet): 15
Length (feet): 350
Width (feet): 300
Side slope (ratio): 4:1
Final elevation (feet): 670

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 8/40
Volume dredged per job (cubic yards): 21,400
Beneficial use demand (cubic yards): 920,000
Beneficial Use by: City of Winona, City of Goodview, Winona County, Winona Township
Other cuts using sites: None

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 93% coarse to fine sand
Silt (%): 7%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Behind existing flood levee
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 6
CUT: 4
SITE: 6.19

Page 3 of 3

SITE: 6.19

SPECIAL CONDITIONS FOR SITE USE: Material to be removed for beneficial use or trucked to Site 6.17 to maintain capacity of site.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	None	
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	2.5	Old Placement site
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL WIDENING BY 7M 00212

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

ABOVE LOWER WINONA RR
POOL: 6
CUT: 4
SITE: 6.19

Frequency: 20 %
/40 yrs
Volume per job: 21,400 cy

	TYPES OF DREDGES						
	PIPELINE			MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$106,000*	\$116,000*	\$109,000*	\$76,000*	\$85,000*	\$101,000*	\$96,000*
Berming Costs	3,000*	4,000*	5,000*	0	0	0	0
Diking Costs	7,000	6,000	5,000	0	0	0	0
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	109,000	120,000	114,000	76,000	85,000	101,000	96,000
Average Annual Costs	21,800	24,000	22,800	15,200	17,000	20,200	19,200

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 6

EXISTING CONDITIONS DESCRIPTION

CUT: 4

SITE: 6.20

SITE: 6.20

Page 1 of 3

CUT LOCATION: 723.9 - 724.2 (Above Winona Railroad Bridge)

PLACEMENT SITE LOCATION: RM 724.6

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 655'
100-year flood: 659.5'
5-year flood: 653'
Flat pool: 645.3'

FLOOD STAGE FACTORS:

Site within floodplain: No*
Site within floodway (effective flow area): No
Site below ordinary high water mark: No
*With completion of Winona Flood Control Project now under construction.

SITE CHARACTER:

% Upland: 100
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Less than 200'
Wetland: None in immediate area
Residence: Less than 200'
Beneficial Use Site: 0'
Other: Area behind levee in City of Winona.

VEGETATION CHARACTER: Site is a previously used disposal area.

SITE OWNER: City of Winona

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: Area is behind a levee.

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Industrial and commercial enterprise.

Adjacent land use: Navigation channel, residential.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 6
CUT: 4
SITE: 6.20

Page 2 of 3

SITE: 6.20

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 60,000
Area at base (acres): 2.5
Height (feet): 15
Length (feet): 350
Width (feet): 300
Side slope (ratio): 4:1
Final elevation (feet): 670

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 8/40
Volume dredged per job (cubic yards): 21,400
Beneficial use demand (cubic yards): 920,000
Beneficial Use by: City of Winona, City of Goodview, Winona County, Winona
Other cuts using sites: 4 Township

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 93% coarse to fine sand
Silt (%): 7%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Behind existing flood levee
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 6
CUT: 4
SITE: 6.20

Page 3 of 3

SITE: 6.20

SPECIAL CONDITIONS FOR SITE USE: Material to be removed for beneficial use or trucked to site 6.17 to maintain capacity of site.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	None	
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	2.5	Old Placement Site
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

ABOVE LOWER WINONA RR
POOL: 6
CUT: 4
SITE: 6.20

Frequency: 20 %
 /40 yrs
 Volume per job: 21,400 cy

CHANNEL MAINTENANCE PLAN COSTS
 PER DREDGING JOB

	TYPES OF DREDGES						
	PIPELINE			MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$ 108,000*	\$ 117,000*	\$ 113,000*	\$ 76,000*	\$ 85,000*	\$ 101,000*	\$ 96,000*
Berming Costs	3,000*	5,000*	5,000*	0	0	0	0
Diking Costs	7,000	6,000	5,000	0	0	0	0
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	111,000	122,000	118,000	76,000	85,000	101,000	96,000
Average Annual Costs	22,200	24,400	23,600	15,200	17,000	20,200	19,200

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 6

EXISTING CONDITIONS DESCRIPTION

CUT: 4

SITE: 6.17

SITE: 6.17

Page 1 of 3

CUT LOCATION: 723.9 - 724.2 (Above Winona Railroad Bridge)

PLACEMENT SITE LOCATION: RM 723.5

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 655'
100-year flood: 658.5'
5-year flood: 652.5'
Flat pool: 645.1'

FLOOD STAGE FACTORS:

Site within floodplain: No*
Site within floodway (effective flow area): No
Site below ordinary high water mark: No
*With completion of Winona Flood Control Project now under construction.

SITE CHARACTER:

% Upland: 0
% Wetland: 100 (Type 3 & 4)
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 3,000'
Wetland: 0'
Residence: Less than 1,000'
Beneficial Use Site: 0'
Other: None

VEGETATION CHARACTER: Open meadow, lowland woods, flood levee (dike) present on upstream side, previously spoiled.

SITE OWNER: Winona Port Authority

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Deer, rabbits, pheasants, raccoons and songbirds frequent area for nesting and feeding. Also used by waterfowl.
Socioeconomic: Industrial development and city airport.

Adjacent land use: Milwaukee Railroad, 1/4 mile from residential area.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 6
CUT: 4
SITE: 6.17

Page 2 of 3

SITE: 6.17

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 875,000
Area at base (acres): 21
Height (feet): 25
Length (feet): 1,300
Width (feet): 700
Side slope (ratio): 4:1
Final elevation (feet): 680

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 8/40
Volume dredged per job (cubic yards): 21,400
Beneficial use demand (cubic yards): 2,920,000
Beneficial Use by: Winona Port Authority, 3 Others
Other cuts using sites: 1,2,3

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 93% coarse to fine sand
Silt (%): 7%
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Enclosed by roads (E & W side) and dike on upstream end.
Areas and features protected by erosion control: Site is isolated from floodflows by railroad trestle and dike, erosion would spread spoil out covering downstream wetlands and filling backside ponds (used by waterfowl and furbearers).

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 6
CUT: 4
SITE: 6.17

Page 3 of 3

SITE: 6.17

SPECIAL CONDITIONS FOR SITE USE:

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	21	3 & 4
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	None	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	This site is to be filled for development of industrial park.	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

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CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

ABOVE LOWER WINONA RR
POOL: 6
CUT: 4
SITE: 6.17

Frequency: 20%
/40 yrs
Volume per job: 21,400 cy

	TYPES OF DREDGES					
	PIPELINE 20 inch	16 inch	12 inch	MECHANICAL		
				Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$165,000*	\$256,000*	\$238,000*	\$144,000*	\$174,000*	\$191,000*
Berming Costs	5,000*	8,000*	9,000*	9,000*	9,000*	9,000*
Diking Costs	7,000	6,000	5,000	5,000	5,000	5,000
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	170,000	264,000	247,000	153,000	183,000	200,000
Average Annual Costs	34,000	52,800	49,400	30,600	36,600	40,000

*GREAT recommended actions

d 11009
c 1100
VS.0 11112

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 6
CUT: 5
SITE: 6.27

SITE: 6.27

Page 1 of 3

CUT LOCATION: 726 - 726.5 (Island 71)

PLACEMENT SITE LOCATION: RM 726

TYPE OF PLACEMENT SITE: Permanent ☒ Temporary

ELEVATIONS AT SITE:

Site (1980): 690'
100-year flood: 661.5'
5-year flood: 654'
Flat pool: 645.5'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100 (previously Type I wetland)
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0'
Residence: Less than 500'
Beneficial Use Site: 0'
Other: Site is adjacent to marina.

VEGETATION CHARACTER: Site is on island and would affect 1/2 acre of Type I wetland that was previously disposed on.

SITE OWNER: City of Winona

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Recreation, marine

Adjacent land use: Navigation channel, marina, railroad and highway bridge.

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 6
CUT: 5
SITE: 6.27

Page 2 of 3

SITE: 6.27

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 9,000
Area at base (acres): .5
Height (feet): 15
Length (feet): 150
Width (feet): 150
Side slope (ratio): 4:1
Final elevation (feet): 696

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 12/40
Volume dredged per job (cubic yards): 8,100
Beneficial use demand (cubic yards): 920,000
Beneficial Use by: Winona City, Township and County, Goodview City
Other cuts using sites: 6

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% coarse to fine sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: None
Areas and features protected by erosion control: Filling of immediately downstream slough, potential coverage of riprap and one wing dam, redeposition in dredge cut 5.

18,300
97,000

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 6
CUT: 5
SITE: 6.27

Page 3 of 3

SITE: 6.27

SPECIAL CONDITIONS FOR SITE USE: Material must be removed by city of Winona after each disposal of dredged material at site.

WILDLIFE HABITAT IMPACTS:

	Acres	Type
Wetlands filled:	None	
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	Old spoil site, previously	Type I Wetland
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE BY WIN CO212

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

ISLAND 71
POOL: 6
CUT: 5
SITE: 6.27

Frequency: 30 % / 40 yrs
Volume per job: 8,100 cy

TYPES OF DREDGES

	PIPELINE					MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	350 H.P.	700 H.P.	Clamshell 700 H.P.	
Basic Dredging Operation	\$ 54,000*	\$ 62,000*	\$ 57,000*	\$ 32,000*	\$ 35,000*	\$ 42,000*	\$ 42,000*	\$ 42,000*	
Berming Costs	2,000*	2,000*	3,000*	0	0	0	0	0	0
Diking Costs	15,000	9,000	3,000	0	0	0	0	0	0
Riprapping Costs	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000
Seasonal Removal ⁽¹⁾	19,000*	19,000*	19,000*	19,000*	19,000*	19,000*	19,000*	19,000*	19,000*
Special Construction	0	0	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0	0	0
Total of GREAT recommended Actions	75,000	83,000	79,000	51,000	54,000	61,000	61,000	61,000	61,000
Average Annual Costs	22,500	24,900	23,700	15,300	16,200	18,300	18,300	18,300	18,300

*GREAT recommended actions
(1) Moved 2 miles (ave.) by beneficial user.

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 6
CUT: 6
SITE: 6.27

SITE: 6.27

Page 1 of 3

CUT LOCATION: 727.7 - 728.1 (Lower Approach to L/D 5A)

PLACEMENT SITE LOCATION: RM 726

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 690'
100-year flood: 661.5'
5-year flood: 654'
Flat pool: 645.5'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100 Previously Type I wetland
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0'
Residence: Less than 500'
Beneficial Use Site: 0'
Other: Site is adjacent to marina.

VEGETATION CHARACTER: Site is on island and would affect $\frac{1}{2}$ acre of Type 1 wetland that was previously disposed on.

SITE OWNER: City of Winona

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Minimal
Socioeconomic: Recreation, marine
Adjacent land use: Navigation channel, marina, railroad and highway bridge

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 6
CUT: 6
SITE: 6.27

Page 2 of 3

SITE: 6.27

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 9,000
Area at base (acres): .5
Height (feet): 15
Length (feet): 150
Width (feet): 150
Side slope (ratio): 4:1
Final elevation (feet): 696

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 16/40
Volume dredged per job (cubic yards): 8,100
Beneficial use demand (cubic yards): 920,000
Beneficial Use by: Winona City, Township, County and Goodview City
Other cuts using sites: 5

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100% coarse to fine sand
Silt (%):
Other (%):
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: None
Areas and features protected by erosion control: Filling of immediately downstream slough, potential coverage of riprap and one wing dam, redeposition in dredge cut 5.

DREDGED MATERIAL PLACEMENT SITE

POOL: 6

CUT: 6

SITE: 6.27

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

Page 3 of 3

SITE: 6.27

SPECIAL CONDITIONS FOR SITE USE: Material must be removed by city of Winona after each disposal of dredged material at site.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	None	
Wetlands altered:	None	
Open water filled:	None	
Upland altered:	Old spoil site, previously Type I wetland	
Endangered Species habitat lost:	None	
Side channels blocked:	None	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

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LOWER APPROACH L/D 5A
POOL: 6
CUT: 6
SITE: 6.27

Frequency: 40 %
 /40 yrs
 Volume per job: 8,100 cy

CHANNEL MAINTENANCE PLAN COSTS
 PER DREDGING JOB

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$	\$	\$	\$ 37,000*	\$ 40,000*	\$ 42,000* \$ 47,000*
Berming Costs				-	-	-
Diking Costs				-	-	-
Riprapping Costs				28,000	28,000	28,000 28,000
Seasonal Removal ⁽¹⁾	-	-	-	19,000*	19,000*	19,000* 19,000*
Special Construction	-	-	-	-	-	-
Land Acquisition	-	-	-	0	0	0 0
Total of GREAT recommended Actions	0	0	0	56,000	59,000	61,000 61,000
Average Annual Costs	0	0	0	22,400	23,600	24,400 24,400

*GREAT recommended actions

(1) Move 2 miles (ave.) by beneficial user.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 6 Cut 1

Alternative Plan	Selected, RFFD	Selected, NED EQ	MPFW/OG		
Placement Site No.	6.17	6.11	6.10		
Site Capacity (cy)	875,000	200,000	20,000		
Site Acreage	21	11	3		
Site Height (ft)	25	15	10		
Potential Beneficial use removal (cy)	2,920,000	920,000	-		
Conditions ¹ favoring use of site	21 2* 4 5 7 10 32 33 15 16	21 2 4 25 6 27 8 9 30 11 32 33 35	1 6 7 8 29 11 32 33 16		
Conditions ¹ adverse to use of site	63 66 48 69 71 74	43 74 56	62 63 64 65 50 74 75		

* with completion of Winona Flood Control Project now under construction.

¹ Code numbers in columns represent
conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 6 Cut 2

Alternative Plan	Selected, RFFD	NED	EQ	EQ	
Placement Site No.	6.17	6.14	6.19	6.20	6.11
Site Capacity (cy)	875,000	111,000	60,000	60,000	200,000
Site Acreage	21	6.9	2.5	2.5	11
Site Height (ft)	25	10	15	15	15
Potential Beneficial use removal (cy)	2,920,000	-	920,000	920,000	920,000
Conditions ¹ favoring use of site	21 2* 4 5 7 28 10 32 33 15 16	21 6 7 8 9 11 32 33 16	21 2* 23 4 5 27 10 11 12 33 35	21 2* 23 4 5 27 10 11 12 33 35	21 2 4 25 27 28 30 11 32 33 35
Conditions ¹ adverse to use of site	63 46 49 71 74	62 43 64 65 70 74 75	46 48 49 54 56	46 48 49 54 56	46 49 74 56

* with completion of Winona Flood Control Project.

¹ Code numbers in columns represent conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 6 Cut 3

Alternative Plan	Selected, MPFW/OG, RFFP	EQ	EQ	MPFW/OG	19
Placement Site No.	6.17	6.19	6.20	6.16	6.112
Site Capacity (cy)	875,000	60,000	60,000	460,000	200,000
Site Acreage	21	2.5	2.5	11	112
Site Height (ft)	25	15	15	20	15
Potential Beneficial use removal (cy)	2,920,000	920,000	920,000	-	920,000 no3
Conditions ¹ favoring use of site	21 2* 4 5 26 7 28 29 10 32 33 15 16	21 2* 23 4 5 27 10 11 12 33 35	21 2* 23 4 5 27 10 11 12 33 35	21 2* 4 5 6 27 28 29 10* 32 33 15	21 2 23 4 25 27 30 11 32 33 35
Conditions ¹ adverse to use of site	63 71 74	46 48 49 54 56	46 48 49 54 56	63 71 74 56	66 68 69 74 56

* with completion of Winona Flood Control Project.

¹ Code numbers in columns represent
conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 6 Cut 4

Alternative Plan	EQ, RFFP Selected	EQ, RFFP Selected	Selected	NED	MPFW/OG
Placement Site No.	6.19	6.20	6.17	6.16	6.18
Site Capacity (cy)	60,000	60,000	875,000	460,000	10,000
Site Acreage	2.5	2.5	21	11	6
Site Height (ft)	15	15	25	20	10
Potential Beneficial use removal (cy)	920,000	920,000	2,920,000	-	-
Conditions ¹ favoring use of site	21 2* 23 4 5 26 27 8 29 10 11 32 33 35	21 2* 23 4 5 26 27 8 29 10 11 32 33 35	21 2* 4 5 7 10 32 33 15 16	21 2* 4 5 27 10* 32 33 15	21 6 7 8 9 11 32 33 16
Conditions ¹ adverse to use of site	54 56	54 56	43 46 68 69	43 46 68 49 56	62 63 64 65 50 74 75

* with completion of Winona Flood Control Project.

¹ Code numbers in columns represent
conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 6 Cut 5

Alternative Plan	Selected NED EQ, MPFW/OG	RFFP			
Placement Site No.	6.27	6.20			
Site Capacity (cy)	Approx 9,000	60,000			
Site Acreage	.5	2.5			
Site Height (ft)	15	15			
Potential Beneficial use removal (cy)	920,000	920,000			
Conditions ¹ favoring use of site	21 2 23 4 5 6 7 29 30 11 12 33 35	21 2* 23 4 5 27 10 11 32 33 35			
Conditions ¹ adverse to use of site	48 54 56	46 48 49 54 56			

* With completion of Winona Flood Control Project.

¹ Code numbers in columns represent
conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 6 Cut 6

Alternative Plan	Selected, NED EO. MPFW/OG	RFFP			
Placement Site No.	6.27	6.20			
Site Capacity (cy)	Approx 9,000	60,000			
Site Acreage	.5	2.5			
Site Height (ft)	15	15			
Potential Beneficial use removal (cy)	920,000	920,000			
Conditions ¹ favoring use of site	21 2 23 4 5 27 30 11 32 33 35	21 2* 23 4 5 27 10 11 32 33 35			
Conditions ¹ adverse to use of site	42 66 68 69 54 56	66 68 69 56			
<p>* With completion of Winona Flood Control Project ¹ Code numbers in columns represent conditions listed on pages ____.</p>					
222					

Key to Conditions Used in Site Comparisons

1. Recreation enhancement
 2. Remove from floodplain
 3. Fish and wildlife enhancement
 4. Beneficial use identified
 5. Existing road access
 6. Adjacent to cut
 7. No land acquisition required
 8. Provides flexibility of equipment
 9. Least cost to dredge
 10. No erosion potential
 11. No special construction required
 12. No diking of berming
 13. No water quality concerns
 14. Aesthetic enhancement
 15. Beneficial use on the site
 16. Sufficient capacity on the site
-
21. No adverse impacts on recreation use
 22. Potential for removal from floodplain
 23. No adverse fish and wildlife impacts
 24. Potential for identifying a beneficial user
 25. Road access can be constructed
 26. Within $\frac{1}{2}$ mile of cut (easy reach of cutterhead dredges)
 27. No apparent problem in acquiring land or easement
 28. Slight limitation on equipment choice
 29. Less costly than dredging to most other sites
 30. Some erosion potential
 31. (Unused)
 32. Berming required
 33. No water quality concern expected
 34. (Unused)
 35. Know of area where material can be put to beneficial use
 36. Sufficient capacity site but less impact if beneficial use demand is developed

41. Some adverse impacts on recreation use
42. In floodplain - no effect on flood flows
43. Some adverse impacts on fish and wildlife
44. No suspected beneficial user can be identified
45. Poor access to the site
46. Within 2 miles of cut (barely within reach of hydraulic dredges)
47. Land or easement acquisition required
48. Equipment choice limited to just a few options
49. More costly than dredging to most of the other sites
50. Severe erosion potential
51. (Unused)
52. Diking required
53. Suspected water quality concerns
54. Some aesthetic problems
55. Potential market for beneficial use suspected but not identified
56. Sufficient capacity on site with removal by identified users

61. Severe adverse impacts on recreation use
62. Placement would cause suspected constriction on flood flows
63. Severe adverse impacts on fish and wildlife
64. No potential for identifying beneficial user
65. No access to the site
66. Beyond 2 miles from cut (cannot be reached directly by cutterhead dredges)
67. Land or easement acquisition required but does not seem likely
68. Severe restrictions on choice of equipment
69. Most costly to dredge
70. Severe erosion potential with severe consequences if failure occurs
71. Special construction required to use the site
72. Berming or diking required with severe consequences if failure occurs
73. Known water quality concerns
74. Adverse aesthetic impacts
75. No potential market for beneficial use
76. Sufficient capacity on site only if potential beneficial use, not now identified, develops

LEGEND

RECOMMENDED CHANNEL MAINTENANCE PLAN

5 -



Site number

ALTERNATIVE MATERIAL PLACEMENT PLANS



4 0 9

Alternative placement site

Site number

POOL 6				
DREDGE CUT	ALTERNATIVE PLACEMENT PLANS			
	MPFW/OG	NED	EQ	RFFP
1	6.10	6.11	6.11	6.17
2	6.14	6.14	6.19/6.20	6.17
3	6.16/6.17	6.17	6.19/6.20	6.17
4	6.18	6.16	6.19/6.20	6.19/6.20
5	6.27	6.27	6.27	6.20
6	6.27	6.27	6.27	6.20

M = Most probable future without GREAT

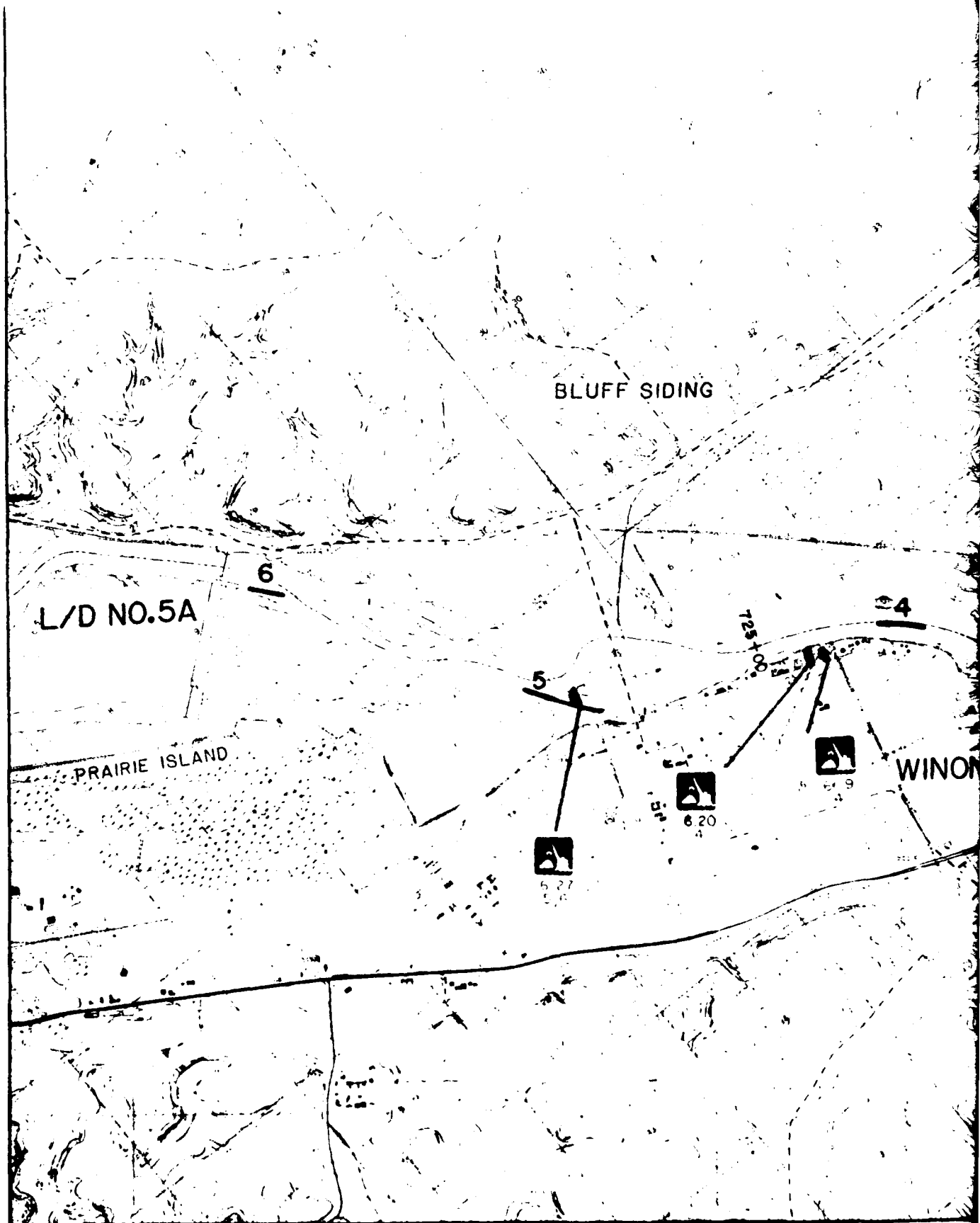
N = National economic development

E = Environmental quality

R = Removal from floodplain

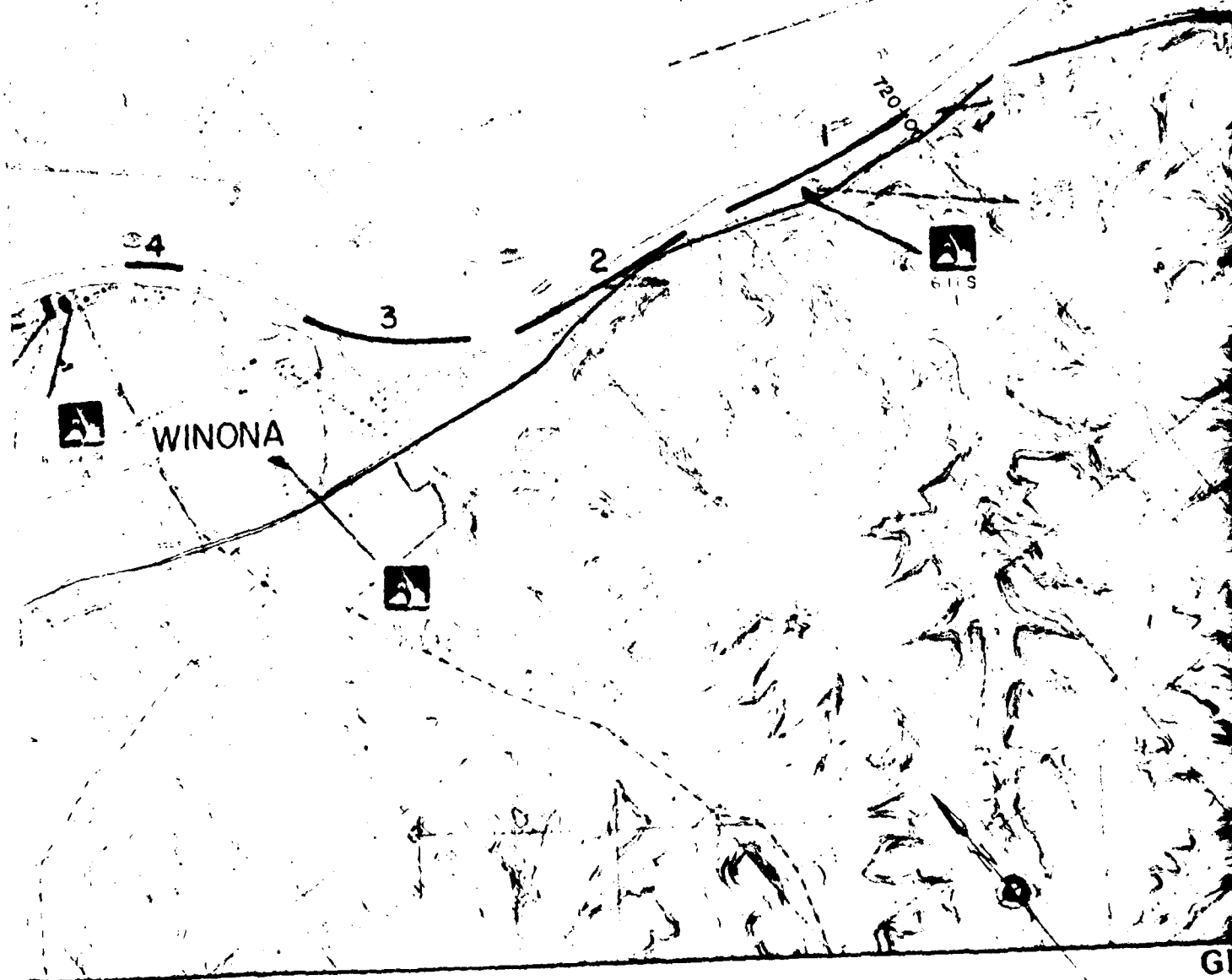
SCALE: 1" = 4,000'

HORIZONTAL INTERVAL 20 FEET
NATIONAL GEODESIC VERTICAL DATUM 1929



FLOODWAY DESIGNATED BY LOCAL ORDINANCE

TREMPEALEAU NATIONAL WILDLIFE REFUGE



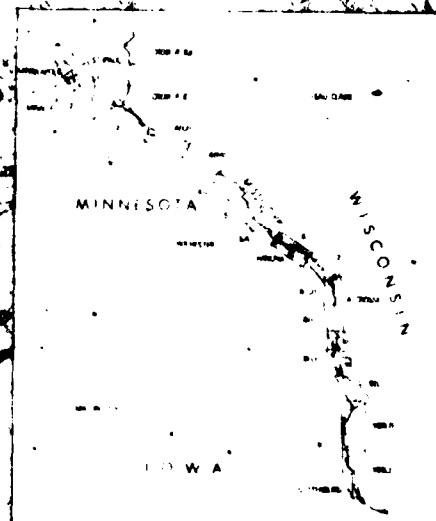
TREMPEALEAU

PERROT STATE PARK

L/D NO.6

75109

LA MOILLE



GREAT RIVER ENVIRONMENTAL ACTION TEAM
UPPER MISSISSIPPI RIVER
(POOL 6 MILE 714 TO MILE 729)



POOL 7

CHANNEL MAINTENANCE PLAN SUMMARY

POOL 7

Dredge Cut	MPFNG CY @ 1985-0225	Selected Site	NED Site	EQ Site	RFP Site	MPFNG Site	MPFNG CY @ 1985-2025	Temporary Site
1. Upper Approach to L/D 7	141,500	7.20/7.01	7.01	7.01	7.01	7.18	156,000	-
2. Head of Dredbach Cut	358,000	7.20/7.01/7.06 7.05/8.06	7.18	7.04	7.04	7.13	392,000	-
3. Dakota	374,000	7.06	7.12	7.04	7.06	7.12	467,000	7.12RB
4. Winter's Landing	467,500	7.06	7.11	7.04	7.06	7.11	661,000	7.11LB
5. Below Queen's Bluff	85,500	7.06	7.10	7.04	7.06	7.10	97,000	-
6. Richmond Island	652,500	7.05	7.04	7.04	7.06	7.04/7.09	712,500	-
7. Lower Approach to L/D 6	93,500	7.06	7.06	7.06	7.06	7.06	99,500	-
	2,172,500						2,586,000	

SELECTED PLAN SUMMARY

Total Volume Dredged (cy)	-	2,172,500
Beneficial Use (cy) Potential from Selected Sites	-	1,327,400
Total Area (acres)	-	36
(Use of site 8.06 would add 44 acres)		
No. of sites with:		
Recreation Enhancement	-	2
Cultural Resources Impacts	-	0
Wetlands Affected:		
Types 1, 2 (acres)	-	9
Types 3, 4, 5 (acres)	-	22

Table 2--
Pool 7 Dredging Volumes

Item	Cut 1		Cut 2		Cut 3		Cut 4	
	With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT	With GREAT	Without GREAT
Cut Name	Upper Approach L/D 7		Head of Dresbach Cut		Dakota		Winters Landing	
1955 - 1974 average annual dredging volume	4,800	4,800	13,900	13,900	14,600	14,600	30,400	30,400
Bend width changes (percent)	--	--	--	--	--	--	-40	--
Adjusted average annual volume	4,800	4,800	13,900	13,900	14,600	14,600	18,200	30,400
Change for 1986 - 2000 (percent)	-24 (1)	-9 (1)	-34	-19	-34	-19	-34	-19
Adjusted average annual volume	3,600	4,400	9,200	11,300	9,600	11,800	12,000	24,600
Total volume dredged, 1986 - 2000	54,000	66,000	138,000	189,500	144,000	177,000	180,000	369,000
Change for 2001 - 2025 (percent)	-27 (1)	-26 (1)	-37	-36	-37	-36	-37	-36
Adjusted average annual volume	3,500	3,600	8,800	8,900	9,200	9,300	11,500	19,500
Total volume dredged, 2001 - 2025	87,500	90,000	220,000	222,500	230,000	232,500	287,500	292,500
Total volume dredged, 1986 - 2025	141,500	156,000	358,000	392,000	374,000	409,500	467,500	661,500
Frequency of dredging (percent)	10	10	25	25	45	45	40	40
Expected number of dredging jobs (1986 - 2025)	4	4	10	10	18	18	16	16
Average dredging volume per job	35,400	39,000	35,800	39,200	20,800	22,800	29,200	41,300

(1) Cut in approach to rigid structure.

Note: All volumes in Cubic Yards

Table 2-- (cont)
Pool 7 Dredging Volumes

Item	Cut 5			Cut 6			Cut 7		
	With GREAT	Without GREAT		With GREAT	Without GREAT		With GREAT	Without GREAT	
Cut Name	Below Queen's Bluff			Richmond Island			Lower Approach L/D 6		
1955 - 1974 average annual dredging volume	3,400	3,400		25,300	25,300		3,100	3,100	
Bend width changes (percent)	-	-		-	-		-	-	
Adjusted average annual volume	3,400	3,400		25,300	25,300		3,100	3,100	
Changes for 1986 - 2000 (percent)	-34	-19		-34	-19		-24 ⁽¹⁾	-9 ⁽¹⁾	
Adjusted average annual volume	2,200	2,800		17,000	20,500		2,400	2,800	
Total volume dredged, 1986 - 2000	33,000	42,000		255,000	307,500		36,000	42,000	
Change for 2001 - 2025 (percent)	-37	-36		-37	-36		-27	-26	
Adjusted average annual volume	2,100	2,200		15,900	16,200		2,300	2,300	
Total volume dredged, 2001 - 2025	52,500	55,000		397,500	405,000		57,500	57,500	
Total volume dredged, 1986 - 2025	85,500	97,000		652,500	712,500		93,500	99,500	
Frequency of dredging (percent)	10	10		35	35		10	10	
Expected number of dredging jobs (1986 - 2025)	4	4		14	14		4	4	
Average dredging volume per job	21,400	24,200		46,600	50,900		23,400	24,900	

Note: All volumes in Cubic Yards

(1) Cut in approach to rigid structure

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

EXISTING CONDITIONS DESCRIPTION

CUT: 1

SITE: 7.20

SITE: 7.20

Page 1 of 3

CUT LOCATION: RM 703.5 - 703.7 (Upper Approach to L/D 7)

PLACEMENT SITE LOCATION: RM 702.6R

TYPE OF PLACEMENT SITE: Permanent X Temporary

ELEVATIONS AT SITE:

Site (1980): 653'
100-year flood: 648'
5-year flood: 642'
Flat pool: 638.5'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: ½ mile
Residence: 500'
Beneficial Use Site: 0
Other:

VEGETATION CHARACTER: Bottomland Hardwood

SITE OWNER: U.S. Army Corps of Engineers

SPECIAL CONCERNS:

Endangered species habitat: Possible roosting area for bald eagles
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Furbearers, Songbirds, Waterfowl, Raptors

Socioeconomic: Part of lock and dam development

Adjacent land use: Corps of Engineer lock and dam, railroad,
U.S. highway

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DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 1
SITE: 7.20

Page 2 of 3

SITE: 7.20

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 40,000 - 55,000
Area at base (acres): 1.7
Height (feet): 20
Length (feet): 500
Width (feet): 100
Side slope (ratio):
Final elevation (feet): 673

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 4/40
Volume dredged per job (cubic yards): 35,400
Beneficial use demand (cubic yards): 108,000
Beneficial Use by: MN DOT, Winona Co
Other cuts using sites: 2

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium to fine sand
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other:
Areas and features protected by erosion control:

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 1
SITE: 7.20

SITE: 7.20

SPECIAL CONDITIONS FOR SITE USE: Unloading facility is required, dredging required to get to site, road must be constructed to site to make beneficial use possible and removal from site is required to maintain capacity.

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	1.7	Bottomland Hardwood
Endangered Species habitat lost:	1.7	Eagle Roosting Habitat
Side channels blocked:	0	
Other:		

Historical/Archeological sites known to exist: ☐
 Historical/Archeological sites were not found: ☐
 Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 1
SITE: 7.20

Frequency: 10%
4/40 yrs
Volume per job: 35,400 cy
Upper Approach L/D 7

TYPES OF DREDGES				
PIPELINE	MECHANICAL			
	20 inch	16 inch	12 inch	Backhoe 350 H.P.
				700 H.P.
				350 H.P.
				Clamshell 700 H.P.

Basic Dredging Operation	\$127,000*	\$139,000*	\$112,000*	\$126,000*	\$144,000*	\$161,000*	\$152,000*
Berming Costs	4,000	5,000	6,000	0	0	0	0
Diking Costs	8,000	7,000	6,000	0	0	0	0
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	127,000	139,000	112,000	126,000	144,000	161,000	152,000
Average Annual Costs	12,700	13,900	11,200	12,600	14,400	16,100	15,200

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 7
CUT: 1
SITE: 7.01

EXISTING CONDITIONS DESCRIPTION

SITE: 7.01 RM 703.5 - 703.7 (Upper Approach to L/D 7)

Page 1 of 3

CUT LOCATION:

PLACEMENT SITE LOCATION: RM 704.5 R

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 653'
100-year flood: 648'
5-year flood: 642'
Flat pool: 638.5'

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 1/4 mile
Residence: Less than 500'
Beneficial Use Site: 0
Other:

VEGETATION CHARACTER: Previously used Placement Site

SITE OWNER: Private (James Smary)

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Future residential development

Adjacent land use: Railroad, Residential, Navigation channel

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 1
SITE: 7.01

Page 2 of 3

SITE: 7.01

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 20,000
Area at base (acres): 1.2
Height (feet): 15
Length (feet): 350
Width (feet): 150
Side slope (ratio):
Final elevation (feet): 668

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 4/40
Volume dredged per job (cubic yards): 35,400
Beneficial use demand (cubic yards): 109,900
Beneficial Use by: MN DOT, Winona Co, City of Dresbach, New Hartford Twp,
Other cuts using sites: 2 City of Dakota.

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium to fine sand
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: None
Other:
Areas and features protected by erosion control: River Bank

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 1
SITE: 7.01

Page 3 of 3

SITE: 7.01

SPECIAL CONDITIONS FOR SITE USE: Removal of material for beneficial use required to maintain capacity at site.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	1.2	Existing Placement site
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 1
SITE: 7.01

Frequency: 10%
4/40 yrs
Volume per job: 35,400 cy

Upper Approach L/D 7

	TYPES OF DREDGES					
	PIPELINE 20 inch	MECHANICAL			Clamshell	
		16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	350 H.P. 700 H.P.
Basic Dredging Operation	\$ 333,000*	\$ 339,000*	\$ 383,000*	\$ 149,000*	\$ 167,000*	\$ 165,000* \$ 180,000*
Berming Costs	5,000	7,000	9,000	0	0	0 0
Diking Costs	8,000	7,000	6,000	0	0	0 0
Riprapping Costs	121,000*	121,000*	121,000*	121,000*	121,000*	121,000*
Seasonal Removal (1)	45,000*	45,000*	45,000*	45,000*	45,000*	45,000*
Special Construction (2)	36,000*	36,000*	36,000*	36,000*	36,000*	36,000*
Land Acquisition	1,000*	1,000*	1,000*	1,000*	1,000*	1,000*
Total of GREAT recommended Actions	536,000	562,000	586,000	352,000	370,000	368,000 383,000
Average Annual Costs	53,600	56,200	58,600	35,200	37,000	36,800 38,300

*GREAT recommended actions

NOTE: Special construction is to be a cost incurred by the dredging operation.

- (1) 20,000 cubic yards must be removed after each dredging to retain site capacity. Assumed to be 1 mile by beneficial user.
- (2) 15,400 cubic yards must be removed during dredging operation. Assumed to be 1 mile.

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

EXISTING CONDITIONS DESCRIPTION

CUT: 2

SITE: 7.20

SITE: 7.20

Page 1 of 3

CUT LOCATION: RM 704.0 - 705.3 (Head of Dresbach)

PLACEMENT SITE LOCATION: RM 702.6R

TYPE OF PLACEMENT SITE: Permanent X Temporary

ELEVATIONS AT SITE:

Site (1980): 653'
100-year flood: 648'
5-year flood: 642'
Flat pool: 638.5'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: ½ Mile
Residence: 500'
Beneficial Use Site: 0
Other:

VEGETATION CHARACTER: Bottomland Hardwood

SITE OWNER: U.S. Army Corps of Engineers

SPECIAL CONCERNS:

Endangered species habitat: Possible roosting area for bald eagles
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Furbearers, Songbirds, Waterfowl, Raptors

Socioeconomic: Part of lock and dam development

Adjacent land use: Corps of Engineers lock and dam, railroad,
U.S. highway

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 2
SITE: 7.20

Page 2 of 3

SITE: 7.20

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 40,000 - 55,000
Area at base (acres): 1.7
Height (feet): 20
Length (feet): 500
Width (feet): 100
Side slope (ratio):
Final elevation (feet): 673

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 35,800
Beneficial use demand (cubic yards): 100,000
Beneficial Use by: MN DOT, Winona Co
Other cuts using sites: 1

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium sand
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other:
Areas and features protected by erosion control:

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 2
SITE: 7.20

Page 3 of 3

SITE: 7.20

SPECIAL CONDITIONS FOR SITE USE: Unloading facility is required, dredging required to get to site, road must be constructed to site to make beneficial use possible, removal from site is required to maintain capacity.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	1.7	Bottomland Hardwood
Endangered Species habitat lost:	1.7	Eagle Roosting Habitat
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 2
SITE: 7.20

Frequency: 25%
10/40 yrs
Volume per job: 35,800 cy
Head of Dresbach Cut

	TYPES OF DREDGES					
	PIPELINE	MECHANICAL				
		20 inch	16 inch	12 inch	Backhoe 350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$ 402,000*	\$ 437,000*	\$ 457,000*	\$ 143,000*	\$ 169,000*	\$ 172,000*
Berming Costs	6,000	7,000	9,000	0	0	0
Diking Costs	8,000	7,000	6,000	0	0	0
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	402,000	437,000	457,000	143,000	169,000	172,000
Average Annual Costs	100,600 ₅	109,300	114,300	35,800	42,300	43,000

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

EXISTING CONDITIONS DESCRIPTION

CUT: 2

SITE: 7.01

SITE: 7.01

Page 1 of 3

CUT LOCATION: RM 704.0 - 705.3 (Head of Dresbach)

PLACEMENT SITE LOCATION: RM 704.5R

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 653'
100-year flood: 648'
5-year flood: 642'
Flat pool: 638.5'

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 1/4 mile
Residence: Less than 500'
Beneficial Use Site: 0
Other:

VEGETATION CHARACTER: Previously used Placement site

SITE OWNER: Private (James Smary)

SPECIAL CONCERNS:

Endangered species habitat: No
Historical or archeological value: Unknown
Other: No

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Future residential development

Adjacent land use: Railroad, Residential, Navigation channel

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 2
SITE: 7.01

Page 2 of 3

SITE: 7.01

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 20,000
Area at base (acres): 1.2
Height (feet): 15
Length (feet): 350
Width (feet): 150
Side slope (ratio):
Final elevation (feet): 668

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 35,800
Beneficial use demand (cubic yards): 109,900
Beneficial Use by: MN DOT, Winona Co, City of Dresbach, New Hartford Twp,
Other cuts using sites: Cut 1, Upper Approach L/D 7 City of Dakota.

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 Medium sand
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: None
Other:
Areas and features protected by erosion control: River Bank

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 2
SITE: 7.01

Page 3 of 3

SITE: 7.01

SPECIAL CONDITIONS FOR SITE USE: Removal of material for beneficial use required during the dredging operation to maintain capacity at site.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	1	Existing Placement Site
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 2
SITE: 7.01

Frequency: 25 %
10 /40 yrs
Volume per job: 35,800 cy

Head of Dresbach Cut

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	700 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$ 185,000*	\$ 212,000*	\$ 235,000*	\$ 131,000*	\$ 145,000*	\$ 168,000*
Berming Costs	6,000	7,000	9,000	0	0	0
Diking Costs	8,000	7,000	6,000	0	0	0
Riprapping Costs	121,000*	121,000*	121,000*	121,000*	121,000*	121,000*
Seasonal Removal (1)	45,000*	45,000*	45,000*	45,000*	45,000*	45,000*
Special Construction (2)	36,000*	36,000*	36,000*	36,000*	36,000*	36,000*
Land Acquisition	1,000*	1,000*	1,000*	1,000*	1,000*	1,000*
Total of GREAT recommended Actions	388,000	415,000	438,000	334,000	348,000	365,000
Average Annual Costs	97,000	103,800	109,500	83,500	87,000	91,300

NOTE: Special construction is to be a cost incurred by the dredging operation.

*GREAT recommended actions

- (1) 20,000 cubic yards must be removed after each dredging to retain site capacity.
- (2) 15,800 cubic yards must be removed during dredging operation. Assumed to be 1 mile.

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

EXISTING CONDITIONS DESCRIPTION

CUT: 2

SITE: 7.06

SITE: 7.06

Page 1 of 3

CUT LOCATION: RM 704.0-705.3 (Head of Dresbach)

PLACEMENT SITE LOCATION: RM 714.2

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 638'
100-year flood: 653'
5-year flood: 647'
Flat pool: 638.5'

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0'
Residence: less than 500'
Beneficial Use Site: 0'
Other:

VEGETATION CHARACTER: Site is old hatching pond which now has 4 acres of type 1 & 2 and 3 acres of types 3 & 4 wetlands

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Fishery, furbearers, waterfowl feeding and nesting

Socioeconomic: Recreation

Adjacent land use: Navigation channel, access to lock & dam 6, residential

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 2
SITE: 7.06

Page 2 of 3

SITE: 7.06

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 1,000,000
Area at base (acres): 21
Height (feet): 30
Length (feet): 1,100
Width (feet): 850
Side slope (ratio): N/A
Final elevation (feet): 668

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 35,800
Beneficial use demand (cubic yards): 1,216,000
Beneficial Use by: Corps of Engineers (Recreational Enhancement), Tremplea-
Other cuts using sites: Cuts 3,4,5,7 leau, Village, Twp & Co.

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium sand
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Site is not subject to flood flows due to existing dike
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 2
SITE: 7.06

Page 3 of 3

SITE: 7.06

SPECIAL CONDITIONS FOR SITE USE:

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	7	Type 1
	14	Type 3,4,5
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	0	
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 2
SITE: 7.06

Frequency: 25%
10/40 yrs
Volume per job: 35,800 cy

Head of Dresbach Cut

PIPELINE	TYPES OF DREDGES			
	16 inch	12 inch	MECHANICAL	
20 inch	Backhoe 350 H.P.	700 H.P.	350 H.P.	Clamshell 700 H.P.

Basic Dredging Operation	\$ 407,000*	\$ 437,000*	\$ 457,000*	\$ 208,000*	\$ 190,000*	\$ 221,000*	\$ 242,000*
Berming Costs	6,000	7,000	9,000	0	0	0	0
Diking Costs	8,000	7,000	6,000	0	0	0	0
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction							
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	407,000	437,000	457,000	208,000	190,000	221,000	242,000
Average Annual Costs	101,800	109,300	114,300	52,000	47,500	55,300	60,500

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

EXISTING CONDITIONS DESCRIPTION

CUT: 2

SITE: 7.05

SITE: 7.05

Page 1 of 3

CUT LOCATION: RM 704.0-705.3 (Head of Dresbach Cut)

PLACEMENT SITE LOCATION:

TYPE OF PLACEMENT SITE: Permanent x Temporary

ELEVATIONS AT SITE:

Site (1980): Approximately 635'
100-year flood: 653'
5-year flood: 647'
Flat pool: 638.5'

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 15
% Wetland: 85
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0'
Residence: 1/2 mile
Beneficial Use Site: 1 mile
Other:

VEGETATION CHARACTER: Site is several commercial fish ponds which are to be filled and developed by the MDNR

SITE OWNER: State of Minnesota

SPECIAL CONCERNS:

Endangered species habitat: Possible clam bed habitat
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Commercial fisheries, waterfowl, furbearers
Socioeconomic: Commercial fisheries
Adjacent land use: U.S. Highway, Railroad, and Navigation channel

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 2
SITE: 7.05

Page 2 of 3

SITE: 7.05

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 300,000
Area at base (acres): 12
Height (feet): 15
Length (feet): 700
Width (feet): 800
Side slope (ratio): N/A
Final elevation (feet): 645

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 35,800
Beneficial use demand (cubic yards): 101,500
Beneficial Use by: Richmond Twp, Winona Co., MN DOT
Other cuts using sites: 5

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium sand
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: Yes
Revegetation: Yes
Other: None
Areas and features protected by erosion control:
Downstream backwaters and riprap.

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 2
SITE: 7.05

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SITE: 7.05

SPECIAL CONDITIONS FOR SITE USE: Site is used only as a secondary site following sites 7.20T, 7.01 and 7.06. This site will not be used unless the above sites have insufficient capacity.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	2	Type 1
	2	Type 3
	2	Type 4
Wetlands altered:	4	Type 5
	0	
Open water filled:	0	
Upland altered:	2	Bottomland, Hardwood
Endangered Species habitat lost:	10	Possible Clam bed habitat
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 2
SITE: 7.05

Frequency: 25%
10/40 yrs
Volume per job: 35,800 cy

Head of Dresbach Cut

PIPELINE	TYPES OF DREDGES			
	16 inch	12 inch	MECHANICAL	
20 inch			Backhoe 350 H.P.	Clamshell 700 H.P.

Basic Dredging Operation	\$ 402,000*	\$ 437,000*	\$ 457,000*	\$ 183,000*	\$185,000*	\$221,000*	\$215,000*
Berming Costs	6,000*	7,000*	9,000*	0	0	0	0
Diking Costs	8,000	7,000	6,000	0	0	0	0
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	00	0
Total of GREAT recommended Actions	408,000	444,000	466,000	183,000	185,000	221,000	215,000
Average Annual Costs	102,000	111,000	116,500	45,800	46,300	55,300	53,800

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

EXISTING CONDITIONS DESCRIPTION

POOL: 7
CUT: 2
SITE: 8.06

SITE: 8.06

Page 1 of 3

CUT LOCATION: RM 704.0-705.3

PLACEMENT SITE LOCATION: RM 696

TYPE OF PLACEMENT SITE: Permanent X Temporary

ELEVATIONS AT SITE:

Site (1980): 656
100-year flood: 643.5
5-year flood: 638
Flat pool: 631

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 1/4 mile
Residence: Less than 1,000'
Beneficial Use Site: 0'
Other:

VEGETATION CHARACTER: Area is on island and is old land fill site, scrub vegetation

SITE OWNER: City of LaCrosse

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Minimal

Socioeconomic: Industrial development, sewage plant, marina

Adjacent land use: Navigation channel, same as above

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 2
SITE: 8.06

Page 2 of 3

SITE: 8.06

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 2,500,000
Area at base (acres): 44
Height (feet): 35
Length (feet): 2,300
Width (feet): 850
Side slope (ratio): 4.1
Final elevation (feet): 691

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 10/40
Volume dredged per job (cubic yards): 35,800
Beneficial use demand (cubic yards): 2,082,000
Beneficial Use by: City of LaCrosse, LaCrosse Co., Shelby Twp., WI DOT
Other cuts using sites: Pool 8; cuts 6-10; pool 9; cuts 4,5,7-10

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium sand
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: None
Areas and features protected by erosion control: None

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 2
SITE: 8.06

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SITE: 8.06

SPECIAL CONDITIONS FOR SITE USE: Site is secondary site and will not be used unless there is insufficient capacity of site 7.20 and 7.01.
Mechanical Unloading Required

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	44	Existing fill material
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 2
SITE: 8.06

Frequency: 25%
10/40 yrs
Volume per job: 35,800 cy
Head of Dresbach Cut

TYPES OF DREDGES

	PIPELINE 20 inch	16 inch	12 inch	MECHANICAL			
				Backhoe 350 H.P.	700 H.P.	350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$ 403,000*	\$ 427,000*	\$ 447,000*	\$ 208,000*	\$190,000*	\$221,000*	\$242,000*
Berming Costs	6,000	7,000	9,000	0	0	0	0
Diking Costs	8,000	7,000	6,000	0	0	0	0
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	403,000	427,000	447,000	208,000	190,000	221,000	242,000
Average Annual Costs	100,800	106,800	111,800	52,000	47,500	55,300	60,500

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 7
CUT: 3
SITE: 7.06

EXISTING CONDITIONS DESCRIPTION

SITE: 7.06

Page 1 of 3

CUT LOCATION: RM 706.1 - 706.7 (Dakota)

PLACEMENT SITE LOCATION: RM 714.2

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 638'
100-year flood: 653'
5-year flood: 647'
Flat pool: 638.5'

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0'
Residence: 500'
Beneficial Use Site: 0'
Other:

VEGETATION CHARACTER: Site is old hatching pond which now has 4 acres of types 1 & 2 and 3 acres of types 3 & 4 wetlands

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Fishery, furbearers, waterfowl feeding and nesting
Socioeconomic: Recreation
Adjacent land use: Navigation channel, access to Lock and Dam 6, residential

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 3
SITE: 7.06

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SITE: 7.06

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 1,000,000
Area at base (acres): 21
Height (feet): 30
Length (feet): 1,100
Width (feet): 850
Side slope (ratio): N/A
Final elevation (feet): 668

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 18/40
Volume dredged per job (cubic yards): 20,800
Beneficial use demand (cubic yards): 1,216,000
Beneficial Use by: Core Of Engineers (Recreation Enhancement), Trempealeau
Other cuts using sites: 2,4,5,7 Village, Twp Co.

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium sand
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Site not subject to flood flows due to existing dike
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 3
SITE: 7.06

Page 3 of 3

SITE: 7.06

SPECIAL CONDITIONS FOR SITE USE: None

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	7	Type 1 & 2
	14	Type 3,4,5
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	0	
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	None	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 3
SITE: 7.06

Frequency: 45%
18/40 yrs
Volume per job: 20,800 cy
Dalsota

	TYPES OF DREDGES					
	PIPELINE				MECHANICAL	
		20 inch	16 inch	12 inch	Backhoe 350 H.P.	Clamshell 350 H.P. 700 H.P.
Basic Dredging Operation	\$ 256,000*	\$ 274,000*	\$ 265,000*	\$ 112,000*	\$ 111,000*	\$ 127,000* \$ 135,000*
Berming Costs	4,000	5,000	6,000	0	0	0 0
Diking Costs	8,000	6,000	4,000	0	0	0 0
Riprapping Costs	0	0	0	0	0	0 0
Seasonal Removal	0	0	0	0	0	0 0
Special Construction	0	0	0	0	0	0 0
Land Acquisition	0	0	0	0	0	0 0
Total of GREAT recommended Actions	256,000	274,000	265,000	112,000	111,000	127,000 135,000
Average Annual Costs	115,200	123,300	119,300	50,400	50,000	57,200 60,800

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

EXISTING CONDITIONS DESCRIPTION

CUT: 3

SITE: 7.12

SITE: 7.12

Page 1 of 3

CUT LOCATION: RM 706.1-706.6

PLACEMENT SITE LOCATION: RM 706.4 RB

TYPE OF PLACEMENT SITE: Permanent _____ Temporary X

ELEVATIONS AT SITE:

Site (1980): 650
100-year flood: 648
5-year flood: 642
Flat pool: 638.5

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 100
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: Adjacent
Residence: 1/4 mile
Beneficial Use Site: 6 1/2 miles
Other:

VEGETATION CHARACTER: Recent dredged material placement site, no vegetation

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other:

EXISTING USE OF SITE:

Fish and Wildlife: Turtle nesting

Socioeconomic: Dredged material placement site

Adjacent land use: Navigation channel

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7

CUT: 3

SITE: 7.12

Page 2 of 3

SITE: 7.12

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 150,000

Area at base (acres): 6.4

Height (feet): 15

Length (feet): 700

Width (feet): 400

Side slope (ratio): -

Final elevation (feet): 655

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 18/40

Volume dredged per job (cubic yards): 20,800

Beneficial use demand (cubic yards): 0

Beneficial Use by:

Other cuts using sites: None

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100

Silt (%): 0

Other (%): 0

Contaminants: Unknown

Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X

Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: No

Revegetation: X

Other: Adjacent backwaters and downstream wing dams

Areas and features protected by erosion control:

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 3
SITE: 7.12

Page 3 of 3

SITE: 7.12

SPECIAL CONDITIONS FOR SITE USE: None

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	6.4	Dredged material
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Channel Maintenance Plan Costs

Cost figures were not calculated for this site because it is a temporary placement site. Material placed at this site must either be immediately removed to another site or removed to another site after material from several dredging jobs has been placed at the site. Cost for rehandling the material will vary according to demand for material, equipment available for removing the material, how much material must be removed during one rehandling operation, and where the material is ultimately placed.

Due to the number of variables affecting the cost of using this temporary site, calculation of cost estimates would not be meaningful for comparing with placement costs at other sites or with other methods.

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

EXISTING CONDITIONS DESCRIPTION

CUT: 4

SITE: 7.06

SITE: 7.06

Page 1 of 3

CUT LOCATION: RM 707.4 - 709.3 (Winter's Landing)

PLACEMENT SITE LOCATION: 7.06 (RM 7.14)

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 638'
100-year flood: 653'
5-year flood: 647'
Flat pool: 638.5'

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0'
Residence: Less than 500'
Beneficial Use Site: 0'
Other:

VEGETATION CHARACTER: Site is old hatching pond which now has 4 acres of Types 1 and 2 and 3 acres of Types 3 and 4 wetlands.

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Fishery, Furbearers, Waterfowl feeding and nesting
Socioeconomic: Recreation
Adjacent land use: Navigation Channel, Access to Lock and Dam 6,
Residential

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 4
SITE: 7.06

Page 2 of 3

SITE: 7.06

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 1,000,000
Area at base (acres): 21
Height (feet): 30
Length (feet): 1,100
Width (feet): 850
Side slope (ratio): N/A
Final elevation (feet): 668

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 16/40
Volume dredged per job (cubic yards): 29,200
Beneficial use demand (cubic yards): 1,216,000
Beneficial Use by: Corps of Engineers (Recreation Enhancement), Trempealeau
Other cuts using sites: Cuts 2,3,5,7 Village, Twp, & Co.

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Site not subject to flood flows due to existing dike
Areas and features protected by erosion control:

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 4
SITE: 7.06

Page 3 of 3

SITE: 7.06

SPECIAL CONDITIONS FOR SITE USE: None.

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	7	Type 1 & 2
	14	Type 3,4,5
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	0	
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 4
SITE: 7.06

Frequency: 40 %
16 /40 yrs
Volume per job: 29,200 cy
Winter's Landing

	TYPES OF DREDGES					
	PIPELINE	MECHANICAL				
		20 inch	16 inch	12 inch	Backhoe 350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$ 341,000*	\$387,000*	\$434,000*	\$151,000*	\$164,000*	\$169,000*
Berming Costs	5,000	8,000	10,000	0	0	0
Diking Costs	8,000	7,000	6,000	0	0	0
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	341,000	387,000	434,000	145,000	151,000	164,000
Average Annual Costs	136,400	154,800	173,600	58,000	60,400	65,600

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

EXISTING CONDITIONS DESCRIPTION

CUT: 4

SITE: 7.11 LB

SITE: 7.11 LB

Page 1 of 3

CUT LOCATION: 707.9 - 709.3 (Winter's Landing)

PLACEMENT SITE LOCATION: 708.9 LB

TYPE OF PLACEMENT SITE: Permanent _____ Temporary X _____

ELEVATIONS AT SITE:

Site (1980): Approximately 644
100-year flood: 648.4
5-year flood: 643.5
Flat pool: 639.0

FLOOD STAGE FACTORS:

Site within floodplain: Yes
Site within floodway (effective flow area): Yes
Site below ordinary high water mark:

SITE CHARACTER:

% Upland: 100
% Wetland: 0
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: 50'
Wetland: 20'
Residence: 1 mile
Beneficial Use Site: 12 miles
Other: None

VEGETATION CHARACTER: Sand Pile

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: Entrance to side channel just downstream

EXISTING USE OF SITE:

Fish and Wildlife: Turtle Nesting
Socioeconomic: Old dredged material placement site
Adjacent land use: Navigation Main Channel, Backwater

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 4
SITE: 7.11 LB

Page 2 of 3

SITE: 7.11 LB

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 38,833
Area at base (acres): 1.5
Height (feet): 15
Length (feet): 150
Width (feet): 430
Side slope (ratio):
Final elevation (feet): (site will be periodically emptied)

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 16/40
Volume dredged per job (cubic yards): 29,200
Beneficial use demand (cubic yards): None
Beneficial Use by: N/A
Other cuts using sites: None

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Site emptied before next seasonal high water
Areas and features protected by erosion control:
1/ Rich backwater area to east
2/ Side channel immediately downstream

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

CUT: 4

SITE: 7.11 LB

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

Page 3 of 3

SITE: 7.11 LB

SPECIAL CONDITIONS FOR SITE USE: Material must be removed before the next
seasonal high water

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	0	
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	0	
Endangered Species habitat lost:	1.5	Existing Placement site
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

Channel Maintenance Plan Costs

Cost figures were not calculated for this site because it is a temporary placement site. Material placed at this site must either be immediately removed to another site or removed to another site after material from several dredging jobs has been placed at the site. Cost for rehandling the material will vary according to demand for material, equipment available for removing the material, how much material must be removed during one rehandling operation, and where the material is ultimately placed.

Due to the number of variables affecting the cost of using this temporary site, calculation of cost estimates would not be meaningful for comparing with placement costs at other sites or with other methods.

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

EXISTING CONDITIONS DESCRIPTION

CUT: 5

SITE: 7.06

SITE: 7.06

Page 1 of 3

CUT LOCATION: RM 710.3-710.7 (Below Queens Bluff)

PLACEMENT SITE LOCATION: RM 714.2

TYPE OF PLACEMENT SITE: Permanent X Temporary _____

ELEVATIONS AT SITE:

Site (1980): 638
100-year flood: 653
5-year flood: 647
Flat pool: 638.5

FLOOD STAGE FACTORS:

Site within floodplain: No
Site within floodway (effective flow area): No
Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 0
% Wetland: 100
% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent
Wetland: 0'
Residence: Less than 500'
Beneficial Use Site: 0'
Other: Site is in old fish ponds in Trempealeau

VEGETATION CHARACTER: Site is old hatching pond which now has 4 acres type 1 and 3 acres type 3 & 4 wetlands

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None
Historical or archeological value: Unknown
Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Fishery, furbearers, waterfowl feeding and nesting
Socioeconomic: Recreation
Adjacent land use: Navigation channel, Access to Lock and Dam 6, Residential

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 5
SITE: 7.06

Page 2 of 3

SITE: 7.06

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 1,000,000
Area at base (acres): 21
Height (feet): 30
Length (feet): 1,100
Width (feet): 850
Side slope (ratio): N/A
Final elevation (feet): 668

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 4/40
Volume dredged per job (cubic yards): 21,400
Beneficial use demand (cubic yards): 1,216,000
Beneficial Use by: Corps of Engineers (Recreational Enhancement), Trempealeau Village, Twp, & Co.
Other cuts using sites: Cuts 2,3,4,7

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium sand
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): No

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Site is not subject to flood flows
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 5
SITE: 7.06

Page 3 of 3

SITE: 7.06

SPECIAL CONDITIONS FOR SITE USE: None

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	7	
	14	type 1,2
		type 3,4
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	0	
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 5
SITE: 7.06

Frequency: 10%
4/40 yrs
Volume per job: 21,400cy

Below Queen's Bluff

TYPES OF DREDGES				
PIPELINE				MECHANICAL
	20 inch	16 inch	12 inch	Backhoe 350 H.P.
				350 H.P.
				700 H.P.
				Clamshell 700 H.P.

Basic Dredging Operation	\$ 251,000*	\$ 277,000*	\$ 313,000*	\$ 99,000*	\$ 97,000*	\$ 128,000*	\$ 115,000*
Berming Costs	4,000	6,000	8,000	0	0	0	0
Diking Costs	8,000	6,000	4,000	0	0	0	0
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	251,000	277,000	313,000	99,000	97,000	128,000	115,000
Average Annual Costs	25,100	27,700	31,300	9,900	9,700	12,800	11,500

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

EXISTING CONDITIONS DESCRIPTION

CITY: 6

STATE: 7.05

7.05

Page 1 of 3

CALLEN: 711.4-712.3 (Richmond Island)

PLACEMENT SITE LOCATION: 713.2RB

TYPE OF PLACEMENT SITE: Permanent ☒ Temporary ☐

ELEVATIONS AT SITE:

Site (1980): Approximately 635'

100-year flood: 653'

5-year flood: 637'

Chart datum: 638.5'

FLOOD STUDY INFORMATION:

Site within floodplain: Yes

Site within floodway protective flow area: Yes

Site below minimum high water mark: No

SITE CHARACTER:

Upland: 15

Wetland: 87

Open water: 0

DISTANCE FROM SITE TO:

Open water: Adjacent

Wetland: 0

Residence: 1/2 mile

Beneficial Use Site: 1 mile

Other: -

VEGETATION / DRAINAGE: - 1/2 mile - several commercial fish ponds which

fill with pond water during tides.

SITE OWNER:

SPECIAL CONCERNS:

Endangered species habitat: Possible clam bed area

Historical or archeological value: Unknown

Other: -

EXISTING USE OF SITE:

Fish and Wildlife: Commercial fisheries, Waterfowl, Furbeare:

Socioeconomic: Commercial fisheries

Adjacent land use: U.S. Highway, Railroad and Navigation channels

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GREAT I STUDY OF THE UPPER MISSISSIPPI RIVER TECHNICAL
APPENDIXES VOLUME 8. (U) GREAT RIVER ENVIRONMENTAL
ACTION TEAM SEP 80

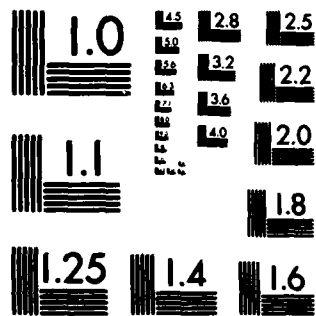
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MICROCOPY RESOLUTION TEST CHART
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DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 6
SITE: 7.05

Page 2 of 3

SITE: 7.05

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): **Approximately 300,000**
Area at base (acres): **12**
Height (feet): **15**
Length (feet): **700**
Width (feet): **800**
Side slope (ratio): **N/A**
Final elevation (feet): **645**

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: **14/40**
Volume dredged per job (cubic yards): **46,600**
Beneficial use demand (cubic yards): **101,500**
Beneficial Use by: **Richmond Twp, Winona Co, MN DOT**
Other cuts using sites: **2**

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): **100 medium to fine sand**
Silt (%): **0**
Other (%): **0**
Contaminants: **None**
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): **X**
Hydraulic (in slurry): **X**

EROSION CONTROL NEEDED:

Riprap: **Yes**
Revegetation: **Yes**
Other:
Areas and features protected by erosion control: **Downstream backwaters and riprap**

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 6
SITE: 7.05

Page 3 of 3

SITE: 7.05

SPECIAL CONDITIONS FOR SITE USE: None

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	2	Type 1
	2	Type 3
	2	Type 4
Wetlands altered:	None	Type 5
Open water filled:	None	
Upland altered:	2	Bottomland Hardwood
Endangered Species habitat lost:	10	Possible Clam bed
Side channels blocked:	None	Habitat
Other:		

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 6
SITE: 7.05

Frequency: 35 %
14 /40 yrs
Volume per job: 46,600 cy
Richmond Island

	TYPES OF DREDGES					
	PIPELINE			MECHANICAL		
	20 inch	16 inch	12 inch	Backhoe 350 H.P.	350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$ 518,000*	\$ 417,000*	\$ 377,000*	\$ 193,000*	\$ 189,000*	\$ 232,000*
Berming Costs	11,000	8,000	8,000	0	0	0
Diking Costs	8,000	8,000	7,000	0	0	0
Riprapping Costs	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0
Total of GREAT recommended Actions	518,000	417,000	377,000	193,000	189,000	232,000
Average Annual Costs	181,300	146,000	132,000	67,600	66,200	81,200

*GREAT recommended actions

DREDGED MATERIAL PLACEMENT SITE

POOL: 7

EXISTING CONDITIONS DESCRIPTION

CUT: 7

SITE: 7.06

SITE: 7.06

Page 1 of 3

CUT LOCATION: 714.0 - 714.3 (Lower Approach L/D 6)

PLACEMENT SITE LOCATION: RM 714.2

TYPE OF PLACEMENT SITE: Permanent X Temporary

ELEVATIONS AT SITE:

Site (1980): 638

100-year flood: 653

5-year flood: 647

Flat pool: 638.5

FLOOD STAGE FACTORS:

Site within floodplain: No

Site within floodway (effective flow area): No

Site below ordinary high water mark: No

SITE CHARACTER:

% Upland: 10

% Wetland: 90

% Open water: 0

DISTANCE FROM SITE TO:

Open Water: Adjacent

Wetland: 0'

Residence: Less than 500'

Beneficial Use Site: 0'

Other: Site is old fish ponds in Trempealeau

VEGETATION CHARACTER: Site is old hatching pond which now has 4 acres type 1 & 2 and 3 acres of type 3 & 4 wetlands

SITE OWNER: Federal

SPECIAL CONCERNS:

Endangered species habitat: None

Historical or archeological value: Unknown

Other: None

EXISTING USE OF SITE:

Fish and Wildlife: Fishery, furbearers, waterfowl feeding and nesting

Socioeconomic: Recreation

Adjacent land use: Navigation channel, access to Lock and Dam 6, residential

DREDGED MATERIAL PLACEMENT SITE
SITE DEVELOPMENT DESCRIPTION AND IMPACTS

POOL: 7
CUT: 7
SITE: 7.06

Page 2 of 3

SITE: 7.06

MAXIMUM SITE DEVELOPMENT DIMENSIONS:

Volume capacity (cubic yards): 1,000,000
Area at base (acres): 21
Height (feet): 30
Length (feet): 1,100
Width (feet): 850
Side slope (ratio): N/A
Final elevation (feet): 668

ESTIMATED SITE USE SCHEDULE:

Frequency cut is dredged: 4/40
Volume dredged per job (cubic yards): 23,400
Beneficial use demand (cubic yards): 1,216,000
Beneficial Use by: Corps of Engineers (Recreation Enhancement), Trempealeau
Other cuts using sites: Cuts 2,3,4,5 Village, Twp & Co.

DREDGED MATERIAL CHARACTERISTICS:

Sand (%): 100 medium to fine sand
Silt (%): 0
Other (%): 0
Contaminants: None
Contaminant Source:

DREDGED MATERIAL PLACEMENT METHODS:

Mechanical (semidry): X
Hydraulic (in slurry): X

EROSION CONTROL NEEDED:

Riprap: None
Revegetation: None
Other: Site is not subject to flood flows due to existing dike
Areas and features protected by erosion control: N/A

DREDGED MATERIAL PLACEMENT SITE

SITE DEVELOPMENT DESCRIPTION AND IMPACTS
(Continued from previous page)

POOL: 7
CUT: 7
SITE: 7.06

Page 3 of 3

SITE: 7.06

SPECIAL CONDITIONS FOR SITE USE: None

WILDLIFE HABITAT IMPACTS:

	<u>Acres</u>	<u>Type</u>
Wetlands filled:	7	types 1,2
	14	types 3,4,5
Wetlands altered:	0	
Open water filled:	0	
Upland altered:	0	
Endangered Species habitat lost:	0	
Side channels blocked:	0	
Other:	0	

HISTORICAL/ARCHEOLOGICAL IMPACTS:

Historical/Archeological sites known to exist: ☐
Historical/Archeological sites were not found: ☐
Historical/Archeological survey not made: ☒

CHANNEL MAINTENANCE PLAN COSTS
PER DREDGING JOB

POOL: 7
CUT: 7
SITE: 7.06

Frequency: 10%
4/40 yrs
Volume per job: 23,400cy

Lower Approach L/D 7

	TYPES OF DREDGES						
	PIPELINE				MECHANICAL		
		20 inch	16 inch	12 inch	Backhoe 350 H.P.	350 H.P.	Clamshell 700 H.P.
Basic Dredging Operation	\$ 73,000*	\$ 77,000*	\$ 58,000*	\$ 83,000*	\$ 94,000*	\$ 99,000*	\$ 99,000*
Berming Costs	2,000	3,000	3,000	0	0	0	0
Diking Costs	7,000	6,000	5,000	0	0	0	0
Riprapping Costs	0	0	0	0	0	0	0
Seasonal Removal	0	0	0	0	0	0	0
Special Construction	0	0	0	0	0	0	0
Land Acquisition	0	0	0	0	0	0	0
Total of GREAT recommended Actions	73,000	77,000	58,000	83,000	94,000	99,000	99,000
Average Annual Costs	7,300	7,700	5,800	8,300	9,400	9,900	9,900

*GREAT recommended actions

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 7 Cut 1

Alternative Plan	Selected	EQ, RFFP, Selected, NED	MPFW/OG		
Placement Site No.	7.20	7.01	7.18		
Site Capacity (cy)	55,000	5,000	463,000		
Site Acreage	1.7	1	11		
Site Height (ft)	20	15	25		
Potential Beneficial use removal (cy)	100,000	109,900	-		
Conditions ¹ favoring use of site	21 22 4 25 6 7 8 9 30 11 32 33 54 35	21 2 4 5 27 10 11 12 33	6 7 8 29 11 32 33 36		
Conditions ¹ adverse to use of site	43 56	43 46 47 48 49 54 55 76	41 42 43 64 65 50 54 75		
¹ Code numbers in columns represent conditions listed on pages _____.					
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COMPARISON OF ALTERNATIVE PLAN SITES

Pool 7 Cut 4

Alternative Plan	Selected, RFFP	NED, MPFW/OG	EQ		
Placement Site No.	7.06	7.11 LB *	7.04		
Site Capacity (cy)	1,000,000	35,833	1,800,000		
Site Acreage	21	1.5	32		
Site Height (ft)	30	15	35		
Potential Beneficial use removal (cy)	1,216,000	-	212,000		
Conditions ¹ favoring use of site	1 2 4 5 7 29 10 12 33 15 16	21 6 7 8 30 11 32 33	21 24 25 7 30 11 12 33 16		
Conditions ¹ adverse to use of site	43 66 68 71 54	42 43 64 65 49 54 75 76	42 43 66 68 49 74 55		

¹ Code numbers in columns represent conditions listed on pages ____.

* Temporary Site.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 7 Cut 5

Alternative Plan	Selected, RFFP	NED, MPFW/OG	EQ		
Placement Site No.	7.06	7.10	7.04		
Site Capacity (cy)	1,000,000	120,000	1,800,000		
Site Acreage	21	7	32		
Site Height (ft)	30	10	35		
Potential Beneficial use removal (cy)	1,216,000	-	213,000		
Conditions ¹ favoring use of site	1 2 4 5 7 29 10 12 33 15 16	1 6 7 8 9 11 33 16	21 24 25 7 30 11 12 33 16		
Conditions ¹ adverse to use of site	43 66 48 71 54	62 63 64 65 70 52 74 75	42 43 46 48 49 74 55		

¹ Code numbers in columns represent conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 7 Cut 6

Alternative Plan	Selected	NED, EO MPFW/OG	RFFP	MPFW/OG	
Placement Site No.	7.05	7.04	7.06	7.09	
Site Capacity (cy)	300,000	1,800,000	1,000,000	175,000	
Site Acreage	12	32	21	11	
Site Height (ft)	15	35	30	10	
Potential Beneficial use removal (cy)	101,500	-	1,216,000	0	
Conditions ¹ favoring use of site	1	21	1	1	
	4	24	2	6	
	5	25	4	7	
	7	6	5	8	
	28	7	7	9	
	30	8	29	11	
	12	9	10	32	
	33	30	12	33	
	15	11	33		
		12	15		
		33	16		
		16			
Conditions ¹ adverse to use of site	42	42	43	62	
	43	43	66	43	
	46	74	48	64	
	49	55	71	65	
	71		54	50	
	54			74	
	56			75	
				76	
<p>¹ Code numbers in columns represent conditions listed on pages ____.</p>					
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Pool 7 Cut 7

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 7 Cut 2

Alternative Plan	Selected	Selected	Selected	Selected	Selected
Placement Site No.	7.20	7.01	7.06	7.05	8.06
Site Capacity (cy)	55,000	5,000	1,000,000	300,000	2,500,000
Site Acreage	1.7	1	21	12	44
Site Height (ft)	20	15	30	15	35
Potential Beneficial use removal (cy)	108,000	108,000	1,000,000	1,500	1,982,000
Conditions ¹ favoring use of site	21 22 4 25 7 30 11 32 33 54 35	21 2 4 5 6 10 11 12 33	1 2 4 5 7 10 12 33 15 16	1 4 5 7 30 12 33 15	21 2 23 4 5 7 10 11 12 35 16
Conditions ¹ adverse to use of site	43 46 48 49 56	43 47 68 49 54 55 76	43 66 68 49 71 54	42 43 66 68 49 71 54 56	66 68 69 54

¹ Code numbers in columns represent
conditions listed on pages ____.

COMPARISON OF ALTERNATIVE PLAN SITES

Pool 7 Cut 2 (Continued)

Alternative Plan	NED, MPFW/OG	EQ, RFFP			
Placement Site No.	7.13	7.04			
Site Capacity (cy)	1,900,000	1,800,000			
Site Acreage	39	32			
Site Height (ft)	30	35			
Potential Beneficial use removal (cy)	-	212,000			
Conditions ¹ favoring use of site	21 6 7 8 9 11 32 33 16	21 24 25 7 30 11 12 33 16			
Conditions ¹ adverse to use of site	62 43 64 65 70 54 75	42 43 66 68 49 74 55			
<p>¹ Code numbers in columns represent conditions listed on pages ____.</p>					
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COMPARISON OF ALTERNATIVE PLAN SITES

Pool 7 Cut 3

Alternative Plan	Selected, RFFP	EQ	NED, MPFW/OG		
Placement Site No.	7.06	7.04	7.12*		
Site Capacity (cy)	1,000,000	1,800,000	500,000		
Site Acreage	21	32	15		
Site Height (ft)	30	35	30 & 10		
Potential Beneficial use removal (cy)	1,216,000	212,000	-		
Conditions ¹ favoring use of site	1	21	6		
	2	24	7		
	4	25	8		
	5	7	9		
	7	30	30		
	10	11	11		
	12	12	32		
	33	33	33		
	15	16	16		
Conditions ¹ adverse to use of site	43	42	41		
	66	43	62		
	68	66	43		
	49	68	64		
	71	49	65		
	54	74	54		
		55	75		

¹ Code numbers in columns represent conditions listed on pages ____.

* Temporary Site.

Key to Conditions Used in Site Comparisons







1. Recreation enhancement
 2. Remove from floodplain
 3. Fish and wildlife enhancement
 4. Beneficial use identified
 5. Existing road access
 6. Adjacent to cut
 7. No land acquisition required
 8. Provides flexibility of equipment
 9. Least cost to dredge
 10. No erosion potential
 11. No special construction required
 12. No diking of berming
 13. No water quality concerns
 14. Aesthetic enhancement
 15. Beneficial use on the site
 16. Sufficient capacity on the site
-
21. No adverse impacts on recreation use
 22. Potential for removal from floodplain
 23. No adverse fish and wildlife impacts
 24. Potential for identifying a beneficial user
 25. Road access can be constructed
 26. Within $\frac{1}{2}$ mile of cut (easy reach of cutterhead dredges)
 27. No apparent problem in acquiring land or easement
 28. Slight limitation on equipment choice
 29. Less costly than dredging to most other sites
 30. Some erosion potential
 31. (Unused)
 32. Berming required
 33. No water quality concern expected
 34. (Unused)
 35. Know of area where material can be put to beneficial use
 36. Sufficient capacity site but less impact if beneficial use demand is developed

41. Some adverse impacts on recreation use
42. In floodplain - no effect on flood flows
43. Some adverse impacts on fish and wildlife
44. No suspected beneficial user can be identified
45. Poor access to the site
46. Within 2 miles of cut (barely within reach of hydraulic dredges)
47. Land or easement acquisition required
48. Equipment choice limited to just a few options
49. More costly than dredging to most of the other sites
50. Severe erosion potential
51. (Unused)
52. Diking required
53. Suspected water quality concerns
54. Some aesthetic problems
55. Potential market for beneficial use suspected but not identified
56. Sufficient capacity on site with removal by identified users


61. Severe adverse impacts on recreation use
62. Placement would cause suspected constriction on flood flows
63. Severe adverse impacts on fish and wildlife
64. No potential for identifying beneficial user
65. No access to the site
66. Beyond 2 miles from cut (cannot be reached directly by cutterhead dredges)
67. Land or easement acquisition required but does not seem likely
68. Severe restrictions on choice of equipment
69. Most costly to dredge
70. Severe erosion potential with severe consequences if failure occurs
71. Special construction required to use the site
72. Berming or diking required with severe consequences if failure occurs
73. Known water quality concerns
74. Adverse aesthetic impacts
75. No potential market for beneficial use
76. Sufficient capacity on site only if potential beneficial use, not now identified, develops

LEGEND

RECOMMENDED CHANNEL MAINTENANCE PLAN

- 5 ——— Dredge cut number
- Location of dredge cut
-  Alternative placement site
-  Site number
-  Alternative conditions on use
-  Temporary use site
-  Alternative for which site is used
-  Alternative site used for placement of material from a cut in another pool

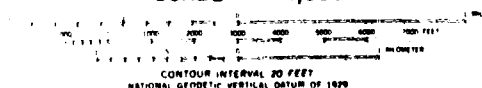
ALTERNATIVE MATERIAL PLACEMENT PLANS

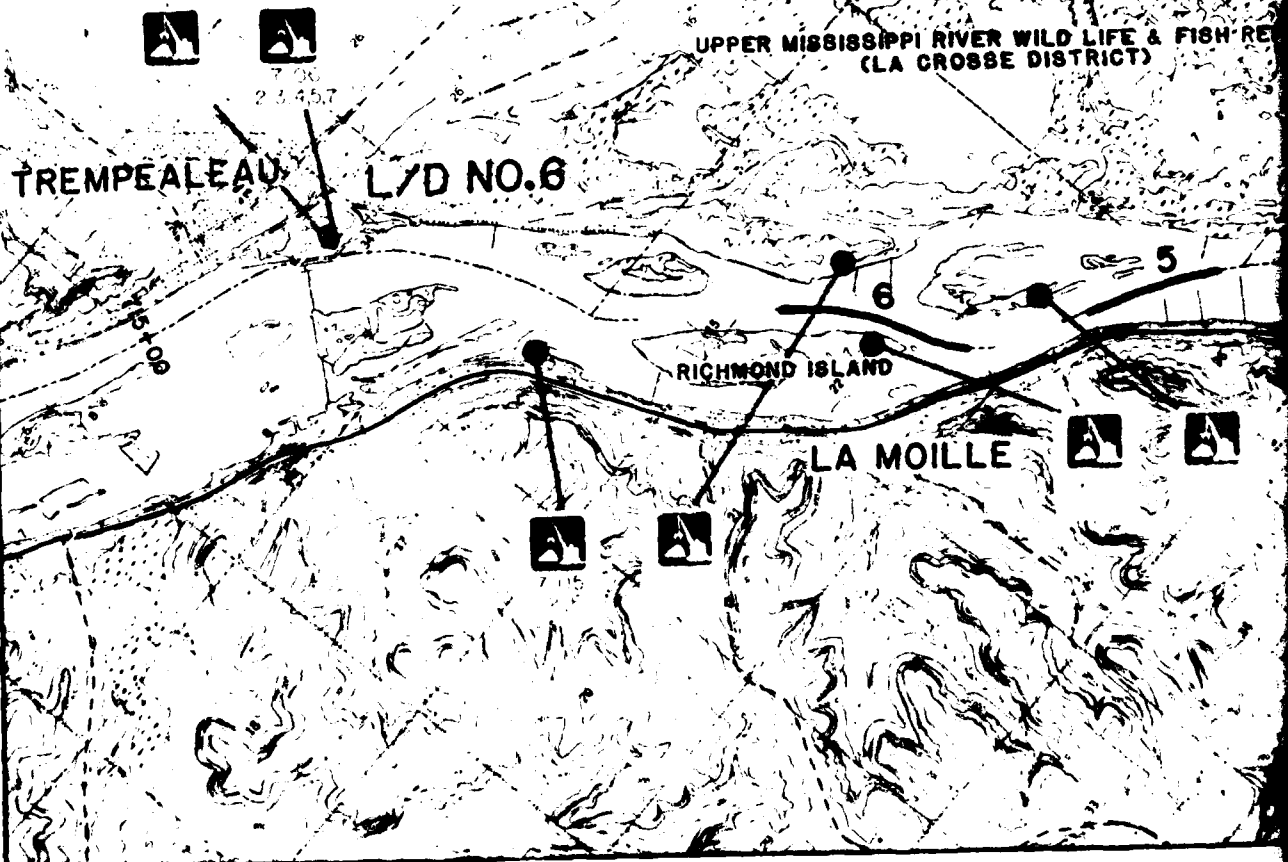
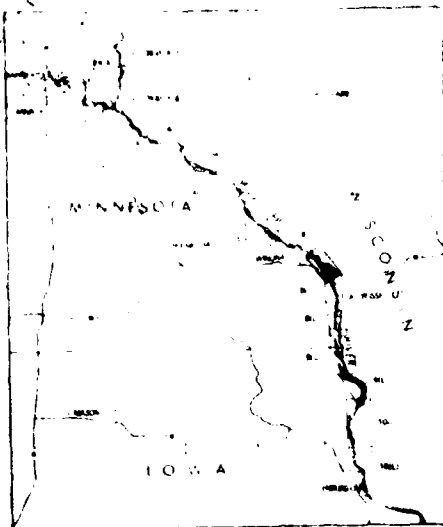
-  Alternative placement site
- 4.09 ——— Site number

POOL 7				
DREDGE CUT	ALTERNATIVE PLACEMENT PLANS			
	MPFW/OG	NED	EQ	RFFP
1	7.18	7.01	7.01	7.01
2	7.13	7.18	7.04	7.04
3	7.12	7.12	7.04	7.06
4	7.11	7.11	7.04	7.06
5	7.10	7.10	7.04	7.06
6	7.04/7.09	7.04	7.04	7.06
7	7.06	7.06	7.06	7.06

M = Most probable future without GREAT
 N = National economic development
 E = Environmental quality
 R = Removal from floodplain

SCALE: 1" = 4,000'





FLOODWAY DESIGNATED BY LOCAL ORD

1

BLACK RIVER

BRICE PRAIRE

LAKE O

WILD LIFE & FISH REFUGE
DISTRICT)

UPPER MISSISSIPPI
(LA

DAKOTA

DRE

LAKE ONALASKA

ONALASKA

PER MISSISSIPPI RIVER WILD LIFE & FISH REFUGE
(LA CROSSE DISTRICT)

FRENCH ISLAND

DRESBACH ISLAND

DRESBACH

L/D NO. 7



O.L. KIPP STATE PARK

GREAT RIVER ENVIRONMENTAL ACTION TEAM
UPPER MISSISSIPPI RIVER

POOL 7 MILE 701 TO MILE 714

3